

Safety Data Sheets (SDS)

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Product Name	Manufacturer Name
#880 Crown & Chassis Grease NGLI #2	Texas Refinery Corporation
+22 Deg. F Splash Windshield Washer Fluid	SuperClean Brands, Inc.
-35 Deg. F Splash Windshield Washer Fluid 55 Gal. Drum	Splash Products, Inc.
3M Hi-Strength 90 Cylinder Spray Adhesive, Clear	3M General Office
3M Super 77 Spray Adhesive	3M Canada Company
00352 Leaded Regular Gasoline	Texaco Inc.
AC 100+, Comp. A	Powers Fasteners, Inc.
Alum. Sheet Coil and Foil - Bare and Coated	Alcoe Australia Rolled Products
ARDEX Feather Finish White	Ardex
ARGON, Compressed	Praxair Inc.
BD1179 Red Grease (64707672)	American Jetway Corporation
BD1553 Red Grease Low Voc	American Jetway Corporation
Bituthene 4000 Surface Conditioner or Perm-A-Barrier Surface Conditioner	W.R. Grace and Companies
Bituthene Mastic (Roanoke)	GCP Applied Technologies
Blender EPDM Compound	Hohmann & Barnard
Break Away Fast Penetrating Oil	Cyclo Industries, LLC
Brick (Roanoke)	Glen-Gery Corporation
Brute Magic Cherry	Applied MSS
CCW-704	Carlisle HVAC Products
Clean Sweep Waxbased Sweeping Compond	Clean Sweep Products
CMR/EMR Neoprene Sponge	Hohmann & Barnard
Concrete Masonry Products (Block, Lintels, Pavers, SRW Units, ACB, and Concrete Brick)	Masolite
Concrete Masonry Products (Light Weight, Medium Weight, Normal Weight Cement)	Masolite
Core Fill Masonry Grout, Self Consolidating Grout	Spec Mix, Inc.
Diesel 9.1.1	Power Service Products
Dolomitic Hydrated Lime	Graymont Wisconsin LLC
Enerfoam Ener42 26oz HC Foam Sealant AUS	DOW
Foaming Glass Cleaner	Malco Products
Foamular Extruded Polystyrene Insulation – Zero Ozone Depletion Formula	Ownes Corning Foam Insulation
Galvanized Steel Wire (Roanoke)	Wire-Bond
Great Stuff Pro Caps & Cracks Insulating Foam Sealant 24oz HC EF RU 12ct	DOW
Great Stuff Pro Gaps & Cracks Insulating Foam Sealant 24oz HC ES GUN 12ct	DOW
HEET Gas Line Antifreeze Line	Gold Eagle Co
Hilti HIT-HY 70	Hilti
Hilti HIT-HY 100	Hilti
Hilti HIT-HY 150 Max, A	Hilti
Irwin Chalk - Yellow, Hi-Vis	Irwin
Kleen Sweep Sweeping Compound, 1810, 1814, 1812, 1815, 1816, 1817, 1818	Green Kleen Products, Inc.
Lafarge Masonry and Mortar Cement	Continental Building Products
Lap Rite (Roanoke)	Royal Adhesives & Sealants
Masonry Cement & Sand Mortar	Spec Mix, Inc.
Methyl Acetylene	Airgas
Millennium Arc 7018	The Lincoln Electric Company
MobilFluid 424	ExxonMobil
Mortar Trap	Hohmann & Barnard
NAPA Premium Conventional SAE 80W-85W-90 Gear Oil	Valvoline
New Dad's Drip Strip	Sansher Corporation
Off Road Diesel Fuel	Lion Oil Company
Oxygen (Compressed Gas)	Airgas
Perm-A-Barrier Wall Flashing (Roanoke)	GCP Canada, Inc.
PVC Compound (Roanoke)	Hohmann & Barnard

Qualipur 7600 Part A	Advanced Polymer Technology
Ready Mix Concrete, Concrete, Portland Cement Concrete, Concrete Blocks	Speedway Construction Products
Reinforced Resin Bonded Abrasive Products	Bullard Abrasives, Inc.
Rheopel Plus	BASF Corporation
Rubber Control Joint (Thermoplastic Elastomer) Expansion Joints) (Roanoke)	Wire-Bond
Rust Penetrant #95	1st AYD Corporation
SAE SW-40 Synthetic Blend Motor Oil CITGO CITGARD SynDurance	CITGO Petroleum Corporation
Safety Boosters (Powder Actuated)	Hilti
Sakrete Fast Setting Cement Patcher-Sakrete Leak Stopper Hydraulic Cement (Gray)	Sakrete Inc.
SpecStrip	SpecChem LLC
SpecStrip Plus	SpecChem
Spraylite 178-XF B-Resin	BASF Corporation
Stainless Steel Products (Roanoke)	Wire-Bond
Stanadyne Performance Formula	Clarcor Inc.
Stand Off Gloss N Guard WB	ProSoCo, Inc.
Steel Wire Rod, Rebar, Wire Mesh	Concrete Waterproofing Manufacturing
Stihl HP 2-Cycle Engine Oil	Stihl
Styrofoam Cavitymate 2.00 x 16” Butt Edge Cavity Wall Extruded Foam Insulation	DOW
Styrofoam 2.00 x 50” Panel Core 30 Extruded Foam Insulation	DOW
Suprex Gold Heavy Duty Engine Oils SAE 10W30, 15W40 & 30	Growmark Inc.
Sure Klean 600	ProSoCo, Inc.
Sure Klean Vana Trol	ProSoCo, Inc.
Unleaded Gasoline	Petrocom Energy Group, LLC
Vitrified Grinding Wheels, including Surface Grinding Wheels (Type 1) and Mounted Points	United Abrasives Inc.
Volclay Waterstoppage	CETCO
Water Additive	Sperian Eye & Face Protection, Inc.
Waterstop-RX	CETCO
WD 40 Type 400ml	Technology Supplies Ltd.
WD-40 Specialist Water Resistant Silicone Lubricant	WD-40 Company
Weldwood Original Contact Cement	DAP Products Inc.
Williams Everlastic 1056 Joint Filler (Roanoke)	Williams Products, Inc.
Williams-Goodco Brick Vents (Roanoke)	Williams Products, Inc.
Xypex Cementitious Products	Xypex Chemical Corporation
Xypex Concentrate; Modified; Concentrate DS-1, DS-2; Patch'N Plug	Concrete Waterproofing Mfr. Pty.
Zerex Original Antifreeze Coolant	Ashland Specialty Chemical Inc.
Zinc Metal – HG & SHG (Roanoke)	Wire-Bond

SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: #880 Crown & Chassis Grease NGLI #2
PRODUCT IDENTIFIER CODE(S): 8455/8456
PRODUCT RECOMMENDED/INTENDED USE: Lubricants
MANUFACTURER/SUPPLIER: TEXAS REFINERY CORP.
ADDRESS: 840 N. MAIN STREET
FORT WORTH, TX 76164
GENERAL INFORMATION: 817-332-1161
24 HR. EMERGENCY PHONE NUMBER: CHEMTREC 1-800-424-9300

SECTION 2 HAZARDS IDENTIFICATION

This material is not considered to be hazardous according to regulatory guidelines (See Section 15.)

SECTION 3 COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS Number	Weight %
Heavy paraffinic distillates (petroleum) (oil mist)	64742-54-7	75-90
*Antimony Compound	ADQ500	<2

Note: ***This product contains a toxic chemical(s) subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372. Each regulated chemical is present at a concentration that does not exceed the specified upper bound concentration value. **(See Section 8 for Exposure Limits)

SECTION 4 FIRST AID MEASURES

PRINCIPAL ROUTES OF EXPOSURE: Skin
EFFECTS OF OVEREXPOSURE: Excessive exposure may result in mild skin and eye irritation. The primary hazard associated with grease is in high pressure grease guns. If injected under the skin, necrosis could result. Ingestion may cause irritation, nausea and/or diarrhea.
EYE: Flush eyes with water for 15 minutes or until irritation subsides.
SKIN: If skin irritation occurs wash skin thoroughly with soap and water. If injected under the skin get immediate medical attention.
INGESTION: Do NOT induce vomiting. Get immediate medical attention.
INHALATION: N/A. No inhalation hazards expected under normal conditions and use of this product.
MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: None known.
NOTES TO PHYSICIAN: None.

SECTION 5 FIRE FIGHTING MEASURES

FIRE CLASSIFICATION: GHS Non-flammable. Non-combustible.
NFPA RATINGS: **HEALTH: 0** **FLAMMABILITY: 1** **REACTIVITY: 0**
FLASH POINT (°F/C) : >410/210 (COC)
LOWER EXPLOSION LIMIT/UPPER EXPLOSION LIMIT: Not determined.
OSHA FLAMMABILITY CLASSIFICATION: Non-flammable. Non-combustible.
SUITABLE EXTINGUISHING MEDIA: Use alcohol foam, dry chemical or CO_2; water fog can be used to keep exposed containers cool.

FIREFIGHTING PROCEDURES: Use air-supplied breathing equipment in enclosed areas. Cool exposed containers with water spray.
PROTECTION OF FIRE FIGHTERS: Self-contained breathing apparatus and full protective gear.
UNUSUAL FIRE AND EXPLOSION HAZARDS: Do not store with strong oxidants.
COMBUSTION PRODUCTS: Carbon monoxide and Carbon dioxide.

SECTION 6 ACCIDENTAL RELEASE MEASURES

PERSONAL PROTECTION: Wear appropriate personal protective equipment when cleaning up spills (See Section 8). Keep unnecessary people away; isolate hazard area and deny entry.
PROCEDURES: Clean up mechanically. Do not flush to sewer or waterways. Prevent release into the environment if possible. Refer to section 15 for spill/release reporting information.

SECTION 7 HANDLING AND STORAGE

HANDLING: Avoid eye contact and prolonged or repeated exposure to skin. Observe good personal hygiene practices when handling this lubricant.
STORAGE: Store container tightly closed away from strong oxidizers.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: None.
PERSONAL PROTECTIVE EQUIPMENT: Not required under normal conditions of use.
EYE/FACE PROTECTION: N/A
SKIN PROTECTION: N/A
RESPIRATORY PROTECTION: N/A
OCCUPATIONAL EXPOSURE LIMITS:

Component	PEL:	TLV:
Heavy paraffinic distillates (petroleum) (oil mist)	5 mg/m^3	5 mg/m^3
Antimony Compound	0.5 mg/m^3	0.5 mg/m^3

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE (Color and physical state): Red grease.
ODOR: Mineral oil odor.
pH: Not Applicable
MELTING POINT/FREEZING POINT: Not determined.
BOILING POINT ($^oF/C$) : >600/316
FLASH POINT ($^oF/C$) : >410/210 (COC)
EVAPORATION RATE (Butyl Acetate=1): N/A
FLAMMABILITY: Non-flammable. Non-combustible.
UPPER/LOWER FLAMMABILITY OR EXPLOSIVE LIMITS: Not determined.
VAPOR PRESSURE (mm Hg) : <1.0
VAPOR DENSITY (Air=1): N/A
SOLUBILITY (ies) in Water: Insoluble.
SPECIFIC GRAVITY (H_2O=1): 0.97
PERCENT VOLATILE BY VOLUME: Nil.

SECTION 10 STABILITY AND REACTIVITY

CHEMICAL STABILITY: This material is considered stable under specified conditions of storage, shipment and/or use.
INCOMPATIBILITY WITH OTHER MATERIALS: Incompatible with strong oxidizers.
CONDITIONS TO AVOID: Extremely high temperatures.
HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide and carbon dioxide.
HAZARDOUS REACTION/ POLYMERIZATION: Will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

ACUTE TOXICITY VALUES:
Heavy paraffinic distillates (petroleum) (oil mist): Oral LD_{50} (Rat) = >6000 mg/kg
Dermal LD_{50} (Rabbit) = >2000 mg/kg
Inhalation LC_{50} (Rat) = 8500 mg/L/4H
Antimony Compound: Oral LD_{50} (Rat) = 7000 mg/kg
Dermal LD_{50} (Rabbit) = No data available.
Inhalation LC_{50} (Rat) = No data available.
IRRITANT EFFECT ON THE SKIN: None.
IRRITANT EFFECT ON THE EYES: None.
SENSITIZATION: None.
MUTAGENICITY: No specific data available
CARCINOGENICITY: None known.
REPROTOXICITY/TERATOGENICITY: None known.
FURTHER INFORMATION ON TOXICOLOGY: This product is expected to be non-toxic based on available data for the components.

SECTION 12 ECOLOGICAL INFORMATION

No ecotoxicity data available for the components.
INFORMATION ON ELIMINATION (PERSISTENCE AND DEGRADABILITY)
BIOACCUMULATION: No specific data available
ECOTOXICOLOGICAL EFFECTS: No specific data available
FURTHER INFORMATION ON ECOLOGY: Do not allow to contaminate the soil, waterways or waste water

SECTION 13 DISPOSAL CONSIDERATIONS

PROCEDURES: Federal, State and/or Local approved disposal methods.
CONTAINER CLEANING AND DISPOSAL: Federal, State and/or Local approved cleaning and disposal methods.

SECTION 14 TRANSPORT INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION (DOT) SHIPPING DESCRIPTION: Not subject to the DOT regulations on dangerous goods.
INTERNATIONAL MARITIME ORGANIZATION (IMDG) SHIPPING DESCRIPTION: Not subject to the IMCO regulations on dangerous goods.
FREIGHT CLASSIFICATION: Petroleum, lubricating grease (NMFC 155250 SUB 2 CLASS 65)

SECTION 15 REGULATORY INFORMATION

TOXIC SUBSTANCES CONTROL ACT (TSCA): All hazardous components of this product are included on the TSCA inventory.
CLEAN WATER ACT (CWA): If spilled into waters of the U.S., this material may be reportable under the Clean Water Act.
CLEAN AIR ACT (CAA): This material is not a hazardous substance under the Clean Air Act.
EPCRA 311/312 CATEGORIES:

1. IMMEDIATE (ACUTE) HEALTH EFFECTS
2. DELAYED (CHRONIC) HEALTH EFFECTS
3. FIRE HAZARD
4. SUDDEN RELEASE OF PRESSURE HAZARD
5. REACTIVITY HAZARD

THIS PRODUCT CONTAINS THE FOLLOWING TOXIC CHEMICAL(S) SUBJECT TO REPORTING REQUIREMENTS OF SARA SECTION 313 (40 CRF 372):

Component	CAS Number	Maximum %
Antimony Compound	ADQ500	2.0

THIS PRODUCT CONTAINS THE FOLLOWING CHEMICAL(S) KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER, BIRTH DEFECTS OR REPRODUCTIVE HARM: N/A

OSHA HAZARD COMMUNICATION STANDARD: When used for its intended purposes, this material is not classified as hazardous in accordance with OSHA 29 CFR 1910.1200.

CANADIAN WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM (WHMIS):
N/A. This product is not regulated by WHMIS (Canada).

EUROPEAN INVENTORY OF EXISTING CHEMICALS (EINECS):
N/A. This product is not regulated under EU.

SECTION 16 OTHER INFORMATION

REVISION INDICATOR: New SDS compliant with GHS AND OSHA.
DATE OF REVISION: 11/13/2013
SUPERSEDES: 09/05/2013

DISCLAIMER: **THIS INFORMATION IS BEING SUPPLIED TO YOU UNDER OSHA "RIGHT TO KNOW" REGULATION 29 CFR 1910.1200 AND IS OFFERED IN GOOD FAITH. THE INFORMATION CONTAINED HEREIN IS BASED ON THE DATA AVAILABLE TO US AND IS BELIEVED TO BE TRUE AND ACCURATE TO THE BEST OF OUR KNOWLEDGE. TEXAS REFINERY CORP. MAKES NO WARRANTY, EXPRESSED OR IMPLIED, REGARDING THE ACCURACY OF THIS DATE, THE HAZARDS CONNECTED WITH THE USE OF THE MATERIAL, OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF. TEXAS REFINERY CORP. MAKES NO WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, CONCERNING THE SAFE USE OF THIS MATERIAL IN YOUR PROCESS OR IN COMBINATION WITH OTHER SUBSTANCES. TEXAS REFINERY CORP. ASSUMES NO RESPONSIBILITY FOR DAMAGE OR INJURY FROM THE USE OF THE PRODUCT DESCRIBED HEREIN.**

GRAINGER
FOR THE ONES WHO GET IT DONE

Close this window MSDS

Common Name: +22 DEG. F SPLASH WINDSHIELD WASHER FLUID
Manufacturer: SUPERCLEAN BRANDS
MSDS Revision Date: 8/29/2006

Grainger Item Number(s): 2EXW8
Manufacturer Model Number(s):

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MATERIAL SAFETY DATA SHEET

MATERIAL IDENTITY: +22 DEG. F SPLASH WINDSHIELD WASHER FLUID

SECTION 1 - MANUFACTURER'S INFORMATION

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MANUFACTURER:
SUPERCLEAN BRANDS, INC.
51 EAST MARYLAND AVENUE
ST. PAUL, MN 55117-4615

TELEPHONE: (651) 489-8211

FACSIMILE: (651) 489-8247

CHEMICAL TRANSPORTATION EMERGENCY CENTER (FOR IMMEDIATE INFORMATION ABOUT A CHEMICAL OR TO SEEK ASSISTANCE FROM A MANUFACTURER):
1-800-424-9300

NATIONAL RESPONSE CENTER (TO REPORT SPILLS OF OIL AND HAZARDOUS MATERIAL):
1-800-424-8802

DATE PREPARED: APRIL 10, 1997

DATE REVISED: AUGUST 29, 2006

REV.: 1

SECTION 2 - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

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COMMON NAME: WINDSHIELD WASHER FLUID

PRODUCT USE: USED FOR CLEANING WINDSHIELDS

PRODUCT IDENTIFICATION: WINDSHIELD WASHER FLUID

NFPA HAZARD RATINGS:
HEALTH 1
FLAMMABILITY 2
REACTIVITY 0
OTHER NOT APPLICABLE

HAZARDOUS COMPONENT*	APPROXIMATE COMPOSITION	OSHA PERMISSIBLE EXPOSURE LIMIT**	NIOSH REL	ACGIH THRESHOLD LIMIT VALUE	IDLH (NIOSH)
METHANOL (METHYL ALCOHOL) -CAS 67-56-1 -UN 1230 (DOT GUIDE 28)	LESS THAN 8% (BY WEIGHT)	200 PPM (260 MG/M3) 8-HOUR TWA (SKIN)	200 PPM (260 MG/M3) 8-HOUR TWA 250 PPM (310 MG/M3) CEILING (SKIN)	200 PPM (260 MG/M3) 8-HOUR TWA 250 PPM (310 MG/M3) SHORT-TERM EXPOSURE LIMIT (15-MINUTE TWA) (SKIN)	6,000 PPM (0.6 PERCENT IN AIR)

* THE HAZARDOUS COMPONENT LISTED IS NOT A KNOWN OR SUSPECTED HUMAN CARCINOGEN AS LISTED OR DETERMINED BY THE NATIONAL AGENCY FOR RESEARCH ON CANCER, NATIONAL TOXICOLOGICAL PROGRAM, "NTP SEVENTH ANNUAL REPORT ON CARCINOGENS," OR INTERNATIONAL AGENCY FOR RESEARCH ON CANCER (IARC) MONOGRAPH REVIEWS. IN ADDITION, IT IS NOT CONSIDERED A CARCINOGEN BY THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION OR THE NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH.

** THIS MSDS CONTAINS THE 1989 PEL'S AND FROM THE JUNE 1993 AIR CONTAMINANTS FINAL RULE, SPECIFIED IN TABLES Z- 1, Z-2, AND Z-3 (FEDERAL REGISTER; 58(124):
35338-35351; JUNE 30, 1993).

SECTION 3 - PHYSICAL/CHEMICAL CHARACTERISTICS

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BOILING POINT: APPROXIMATELY 190 DEG. F (FOR PRODUCT)

FLASH POINT:
GREATER THAN 175 DEG. F (IT BOILED AT 190 DEG. F - SEE DOT DESIGNATION IN SECTION 7)

SOLUBILITY IN WATER: SOLUBLE

VAPOR PRESSURE: 100 MM @ 21.2 DEG. (METHANOL)

VAPOR DENSITY: 1.11 (METHANOL)

IONIZATION POTENTIAL: 10.84 cV (METHANOL)

FREEZING POINT: +22 DEG. F

APPEARANCE AND ODOR:
THE WINDSHIELD WASHER IS BLUE, AND IT HAS A MILD CHARACTERISTIC PUNGENT ODOR FROM THE METHANOL. THE ODOR THRESHOLD FOR METHANOL IS 10 PPM.

SECTION 4 - FIRE AND EXPLOSION HAZARD DATA

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FLAMMABLE LIMITS:
UEL: 36 PERCENT FOR METHANOL
LEL: 6 PERCENT FOR METHANOL

AUTO IGNITION TEMPERATURE: 878 DEG. F FOR METHANOL

EXTINGUISHING MEDIA FOR METHANOL:

SMALL FIRES:
DRY CHEMICAL, CARBON DIOXIDE, WATER SPRAY OR ALCOHOL RESISTANT FOAM.

LARGE FIRES: WATER SPRAY, FOG OR ALCOHOL-RESISTANT FOAM.

SPECIAL FIRE FIGHTING PROCEDURES:
MOVE CONTAINER AWAY FROM FIRE AREA IF YOU CAN DO SO WITHOUT RISK. DIKE FIRE CONTROL WATER FOR LATER DISPOSAL; DO NOT SCATTER THE MATERIAL. APPLY COOLING WATER TO THE SIDES OF CONTAINERS EXPOSED TO FLAMES UNTIL WELL AFTER THE FIRE IS OUT.

UNUSUAL FIRE AND EXPLOSION HAZARDS FOR METHANOL:

FLAMMABLE/COMBUSTIBLE MATERIAL; MAY BE IGNITED BY HEAT, SPARK OR FLAME. VAPORS MAY TRAVEL TO A SOURCE OF IGNITION AND FLASH BACK. CONTAINER MAY EXPLODE IN HEAT OF FIRE.

VAPOR EXPLOSION AND POISON HAZARD INDOORS, OUTDOORS, OR IN SEWERS. RUNOFF TO SEWER MAY CREATE FIRE OR EXPLOSION HAZARD.

SECTION 5 - REACTIVITY DATA

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STABILITY/POLYMERIZATION:
IN A CLOSED CONTAINER, METHYL ALCOHOL IS STABLE AT ROOM TEMPERATURE AND IT IS STABLE UNDER ROUTINE HANDLING AND STORAGE. HAZARDOUS POLYMERIZATION WILL NOT OCCUR.

INCOMPATIBILITY (MATERIAL TO AVOID):

INCOMPATIBLE WITH BERYLLIUM DIHYDRIDE; METALS; OXIDANTS; POTASSIUM TERT-BUTOXIDE; CARBON TETRACHLORIDE + METALS; DICHLOROMETHANE. CAN REACT VIGOROUSLY WITH OXIDIZING MATERIALS.

EXPLOSIVE REACTION WITH CHLOROFORM + SODIUM METHOXIDE; DIETHYL ZINC. VIOLENT REACTION WITH ALKYL ALUMINUM SALTS; ACETYLE BROMIDE; CHLOROFORM + SODIUM HYDROXIDE; CRO3; CYANURIC CHLORIDE; (I + ETHANOL + HGO); PB (ClO4)2; HClO4; P2O3; (KOH + CHCl2); NITRIC ACID.1

HAZARDOUS DECOMPOSITION OR BY-PRODUCTS:
WHEN METHANOL IS HEATED TO DECOMPOSITION, CARBON DIOXIDE AND CARBON MONOXIDE MAY BE PRODUCED, AS WELL AS FORMALDEHYDE MAY BE PRODUCED, AND IT EMITS ACRID SMOKE AND IRRITATING FUMES.

(1) LEWIS, RICHARD J., SR.:
SAX'S DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS, EIGHTH EDITION. NEW YORK.

NEW YORK: VAN NOSTRAND REINHOLD, 1992.

SECTION 6 - HEALTH HAZARD DATA

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ROUTES OF ENTRY (METHANOL):
THE PRIMARY ROUTES OF ENTRY ARE INHALATION, INGESTION, AND ABSORPTION.

HEALTH HAZARDS AND SIGNS AND SYMPTOMS OF EXPOSURE (METHANOL):
IRRITANT TO EYES, SKIN, AND UPPER RESPIRATORY SYSTEM. HEADACHES, DROWSINESS, DIZZINESS, VERTIGO, LIGHT-HEADED, NAUSEA, AND VOMITING. VISUAL DISTURBANCE, OPTIC NERVE DAMAGE, AND BLINDNESS. SKIN EXPOSURE HAZARD.

TARGET ORGANS: CENTRAL NERVOUS SYSTEM, DIGESTIVE TRACT, EYES, AND SKIN.

ACUTE EFFECTS:

EYE IRRITATION. INHALATION CAN RESULT NOSE IRRITATION, HEADACHE, FATIGUE, NAUSEA, VISUAL IMPAIRMENT OR COMPLETE AND POSSIBLE BLINDNESS, ACIDOSIS, CONVULSIONS, CIRCULATORY COLLAPSE, RESPIRATORY FATIGUE, AND DEATH.

INGESTION CAN CAUSE GASTROINTESTINAL (GI) IRRITATION FOLLOWED BY THE SYMPTOMS DESCRIBED FOR INHALATION AND POSSIBLE KIDNEY IMPAIRMENT. SKIN CONTACT RESULTS IN A COLD SENSATION, DRYNESS, AND CRACKING, POSSIBLY LEADING TO DERMATITIS.

METHYL ALCOHOL MAY BE ABSORBED THROUGH THE SKIN AND MAY CAUSE HEADACHE, FATIGUE, AND VISUAL DISTURBANCES. EYE CONTACT RESULTS IN IRRITATION WITH LACRIMATION, INFLAMED LIDS, AND PHOTOPHOBIA.

CHRONIC EFFECTS:
CHRONIC EXPOSURE MAY RESULT IN VISUAL IMPAIRMENT OR BLINDNESS.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:
OCULAR, RESPIRATORY, OR DERMAL DISORDERS MAY BE AGGRAVATED BY METHANOL EXPOSURE.

EMERGENCY AND FIRST AID PROCEDURES:

EYES: RINSE WITH WATER 15 TO 20 MINUTES, SEEK MEDICAL ASSISTANCE.

SKIN: FLUSH WITH WATER FOR 15 MINUTES.

INHALATION:
REMOVE FROM SOURCE TO FRESH AIR, PROVIDE RESPIRATORY SUPPORT AS NEEDED.

INGESTION:
INDUCE VOMITING, THEN GIVE TWO TEASPOONS OF BAKING SODA IN A GLASS OF WATER; CALL A PHYSICIAN.

SECTION 7 - PRECAUTIONS FOR SAFE HANDLING AND USE

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STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

KEEP UNNECESSARY PEOPLE AWAY; ISOLATE HAZARD AREA AND DENY ENTRY.

STAY UPWIND; KEEP OUT OF LOW AREAS.

SHUT OFF IGNITION SOURCES; NO FLARES, SMOKING OR FLAMES IN HAZARD AREA.

POSITIVE PRESSURE SELF-CONTAINED BREATHING APPARATUS AND CHEMICAL PROTECTIVE CLOTHING IS RECOMMENDED FOR PERSONNEL INVOLVED IN CLEAN-UP PROCEDURES WITH NO FIRE.

DO NOT WALK THROUGH SPILLED MATERIAL; STOP LEAK IF IT CAN BE DONE WITHOUT RISK.

WATER SPRAY MAY REDUCE VAPOR; BUT IT WILL NOT PREVENT IGNITION IN CLOSED SPACES.

WASTE DISPOSAL METHOD:
DISPOSE OF IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL REGULATIONS.

EPA DESIGNATIONS:

RCRA HAZARDOUS WASTE (40 CFR 261.33): HAZARDOUS WASTE NO. U154

CERCLA HAZARDOUS SUBSTANCE (40 CFR 302.4): NOT LISTED

SARA EXTREMELY HAZARDOUS SUBSTANCE (40 CFR 355): NOT LISTED

SARA TOXIC CHEMICAL (40 CFR 372.65): NOT LISTED

DOT DESIGNATION:
THIS IS AN AQUEOUS SOLUTION OF ALCOHOL CONTAINING LESS THAN 24 PERCENT ALCOHOL BY VOLUME, AND CONTAINS GREATER THAN 50 PERCENT WATER. THEREFORE IT FALLS UNDER THE 173.150 EXCEPTIONS FOR CLASS 3 (FLAMMABLE) AND COMBUSTIBLE LIQUIDS, AND IT IS NOT SUBJECT TO THE REQUIREMENTS OF THAT SUBCHAPTER.

SECTION 8 - SPECIAL PROTECTION INFORMATION

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RESPIRATORY PROTECTION:
UNDER NORMAL USE CONDITIONS (OUTDOOR WINDSHIELD CLEANING), RESPIRATORY PROTECTION IS NOT JUSTIFIED.

PROTECTIVE EYE WEAR:
SPLASH GOGGLES ARE RECOMMENDED WHEN HANDLING THE SOLUTION. CONTACT LENS USE IS NOT RECOMMENDED.

PROTECTIVE CLOTHING:
THE SELECTION OF PROTECTIVE CLOTHING AND GLOVES IS DEPENDENT UPON ANTICIPATED EXPOSURE. AS REPORTED BY THE MANUFACTURER, BEST GLOVE STYLE 725R (PVC) OFFERS EXCELLENT PROTECTION FOR UP TO 240 MINUTES OF COMPLETE IMMERSION.

SECTION 9 - OTHER HAZARDOUS INFORMATION AND DEFINITIONS

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OSHA PEL:
THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION'S PERMISSIBLE EXPOSURE LIMIT, WHICH IS DEFINED AS THE MAXIMUM CONCENTRATION OF CONTAMINANT TO WHICH A NORMAL HEALTHY INDIVIDUAL MAY BE EXPOSED 8-HOURS PER DAY, 40-HOURS PER WEEK, WITHOUT EXPERIENCING ADVERSE HEALTH EFFECTS OVER A WORKING LIFETIME.

ACGIH TLV:
AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENIST'S THRESHOLD LIMIT VALUE, SIMILAR TO THE OSHA PEL BUT NOT CONSIDERED A LEGAL STANDARD.

SECTION 10 - TRANSPORTATION INFORMATION

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DOT HAZARD DESCRIPTION: FLAMMABLE LIQUID, CONSUMER COMMODITY, ORM-D

MSDS PREPARED BY: MAXIM TECHNOLOGIES, INC.

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MSDS: +22 DEG. F SPLASH WINDSHIELD WASHER FLUID

MATERIAL SAFETY DATA SHEET

MATERIAL IDENTITY: -35° F Splash Windshield Washer Fluid 55 Gal. Drum

SECTION 1 – PRODUCT IDENTIFICATION & COMPAY INFORMATION

Manufacturer: SPLASH PRODUCTS, INC.
51 East Maryland Avenue
St. Paul, MN 55117-4615

Telephone: (651) 489-8211

Facsimile: (651) 489-8247

Transportation Emergency (for immediate information about a chemical or to seek assistance from a manufacturer): 1-800-535-5053

Date Updated: February 7, 2011

SECTION 2 - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

Hazardous Component*	Approximate Composition	OSHA Permissible Exposure Limit**	NIOSH REL	ACGIH Threshold Limit Value	IDLH (NIOSH)
Methanol (Methyl Alcohol) -CAS 67-56-1 -UN 1230 (DOT Guide 28)	34 percent by weight	200 ppm (260 mg/m^3) 8-Hour TWA (Skin)	200 ppm (260 mg/m^3) 8-Hour TWA 250 ppm (310 mg/m^3) Ceiling (Skin)	200 ppm (260 mg/m^3) 8-Hour TWA 250 ppm (310 mg/m^3) Short-term Exposure Limit (15-minute TWA) (Skin)	6,000 ppm (0.6 percent in air)

HMIS: HEALTH: 2 FLAMMABILITY: 2 REACTIVITY: 0 SPECIAL: NONE

RATING SCALE: 0=MINIMAL 1=SLIGHT 2=MODERATE 3=SERIOUS 4=SEVERE

SECTION 3 – HAZARDOUS IDENTIFICATION

The hazardous component listed is not a known or suspected human carcinogen as listed or determined by the National Agency for Research on Cancer, National Toxicological Program "NTP Seventh Annual Report on Carcinogens," or International Agency for Research on Cancer (IARC) monograph reviews. In addition, it is not considered a carcinogen by the Occupational Safety and Health Administration or the National Institute for Occupational Safety and Health.

Can cause eye and skin irritation. HARMFUL IF SWALLOWED. DANGER POISION. FLAMMABLE. CAN NOT BE MADE NONPOISONOUS. Irritation to respiratory track.

INGESTION: Can cause blindness.

INHALATION: May cause headaches, dizziness, nausea, incoordination, drowsiness, visual impairment and unconsciousness

EYE CONTACT: Irritating to eyes; may cause severe and permanent damage.

SKIN CONTACT: Prolonged or repeated contact without rinsing with water may cause irritation.

MATERIAL SAFETY DATA SHEET

MATERIAL IDENTITY: -35° F Splash Windshield Washer Fluid 55 Gal. Drum

SECTION 4 – FIRST AID MEASURES

INGESTION: Do not give liquid if victim is unconscious or drowsy. Otherwise, give 1 or 2 glasses of water. Call doctor, hospital emergency room or poison control center for instructions to induce vomiting. When medical advice is not available, induce vomiting using syrup of ipecac according to direction. If ipecac not available, induce vomiting with finger or back of spoon by touching the back of the victim's throat. Get medical attention.

INHALATION: If exposed to excessive levels of vapors. Remove to fresh air.

EYE CONTACT: Immediately flush eye with plenty of cool, running water. Remove contact lenses if applicable, and continue flushing for at least 15 minutes, holding eyelids apart to ensure thorough rinsing of the entire eye. **Speed is essential to minimize injury**. **Call a physician immediately**.

SKIN CONTACT: immediately flush skin with plenty of cool running water for at least 15 minutes. Wash with soap and water. If irritation develops or persists, get medical attention. Remove contaminated clothing and shoes; wash before reuse.

SECTION 5 – FIRE FIGHTING MEASURES

FLASH POINT: 90°F

FALMMABLE LIMITS: In air % by volume, LEL: 6% UEL: 36%

EXTINGUSING MEDIA: Use of dry chemical, carbon dioxide, water spray, alcohol foam.

SPECIAL FIRE FIGHTING PROCEDURES: Use fog or spray to prevent flooding. Be prepared to use MSHA-NIOSH self contained breathing apparatus and protecting clothing.

FIRE AND EXPLOSION HAZARDS: Treat as flammable liquid. There is a chance of moderate explosion and/or dangerous fire hazard.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

RESPONSE TO SPILLS: Eliminate all sources of ignition immediately. Mop up residue and rinse area thoroughly with water. Contain run-off with absorbent material such as sand or clay and diking. Transfer liquid and absorbent material in approved container. Flush and mop area with water allowing to air dry. Keep spill out of sewers and open bodies of water.

SECTION 7 – HANDELING AND STORAGE

HANDELING PERCAUSIONS: Follow directions on label. Wash after handling and before eating.

STORAGE PRECAUTIONS: Store container upright. Tighten cap securely. Avoid heat, sparks, as flames. Protect container from physical damage. **KEEP AWAY FROM CHILDERN**

MATERIAL SAFETY DATA SHEET

MATERIAL IDENTITY: -35° F Splash Windshield Washer Fluid Gal. Drum

SECTION 8 – EXPOSURE CONTROLS / PERSONAL PROTECTION

HIGIENIC PRACTICES: Avoid breathing vapors. Use with adequate ventilation. Wash thoroughly with soap and water after handling. Follow direction on label. Do not store near food stuffs, water or feed.

SKIN PROTECTION: Rubber or neoprene gloves and additional protection including impervious boots, apron, or coveralls, as needed in areas of unusual exposure.

EYE PROTECTION: Use chemical safety goggles. Maintain eye wash fountain and quick-drench facilities in work area.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

APPARANCE: Clear purple liquid

ODOR: Mild alcohol odor

pH: 8.2

SPECIFIC GRAVITY: (water =1): .948 @60°F

SOLUBILITY IN WATER: 100%

BOILING POINT: 170°F

FREEZE POINT: -35°F

VAPOR PRESSURE (mm of Hg): 97 @20C (68F)

VAPOR DENSITY (Air =1): 1.1

EVAPORATION RATE (BuAc=1): 5.9

SECTION 10 – STABILITY AND REACTIVIEY

CONDITIONS TO AVOID: HEAT, SPARKS, FLAMES. No smoking when using.

INCAPATIBILITY: Strong oxidizing agents such as nitrates and sulfuric acid.

HAZARDOUS DICOMPOSITION PRODUCTS: Burning can product carbon monoxide and /or carbon dioxide. Carbon monoxide is highly toxic if inhaled. Carbon dioxide in sufficient concentration can act as an asphyziant.

HASARDOUS POLYMERIZATION: will not occur.

SECTION 11 – TOXIOLOGICAL INFORMATION

CARCINOGENICITY: This product does not contain any known or anticipated carcinogens according to the criteria of the NPT annual report on carcinogens and OSHA 29 CFR 1910, Z.

Methyl Alcohol (Methanol): Oral rat LD50: 5628 mg/kg: inhalation rat LC50: 64000 ppm/4H: skin rabbit LD50: 15800 mg/kg; irritation data-standard Draize test: skin, rabbit: 20mg/24hr. Moderate; eye, rabbit: 100mg/24hr. Moderate. Investigated as a mutagen, reproductive effector.

METHYL ALCOHOL (67-56-1) CARCINOGEN: Known: No. Anticipated: No.

MATERIAL SAFETY DATA SHEET

MATERIAL IDENTITY: -35° F Splash Windshield Washer Fluid 55 Gal. Drum

SECTION 12 – ECOLOGICAL INFORMATION

ENVIORNMENTAL: When released into the soil, this material is expected to readily biodegrade. When released into the soil, this material is expected to leach into groundwater. When released into the soil, this material is expected to quickly evaporate. When released into water, this material is expected to have a half-life between 1 and 10 days. When released into water, this material is expected to readily biodegrade. When released into the air, this material is expected to exist in the aerosol phase with a short half-life. When released into the air, this material is expected to readily degraded by reaction with photo chemically produced hydroxyl radicals. When released into air, this material is expected to have a half-life between 10 and 30 days. When released into the air, this material is expected to be readily removed from the atmosphere by wet deposition.

ENVIRONMENTAL TOXICITY: This material is expected to be slightly toxic to aquatic life.

SECTION 13 – DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHAOD: Dispose in accordance with federal, state and local regulations.

SECTION 14 – TRANSPORT INFORMATION

(U.S. D.O.T.) – U.S. Department of Transportation:
Proper Shipping name: **UN 1993** Flammable liquid, N.O.S. (CONTAINS METHANOL) 3 pgIII

SECTION 15 – REGULATORY INFORMATION

THIS PRODUCT CONTAINS COMPONENT(S) CITED ON THE FOLOWING REGULATIONS:

CHEMICAL NAME	CAS NUMBER
Methanol	67-56-1

U.S.FEDERAL REGULATIONS
TSCA (Toxic Substance Control Act) Status – TSCA (UNITED STATES)

CERCLA RQ – 40 CFR 3.2.1 (a)

Component	RQ (lbs)
Methyl Alcohol	5,000

MATERIAL SAFETY DATA SHEET

MATERIAL IDENTITY: -35° F Splash Windshield Washer Fluid 55 Gal. Drum

SARA 302 Components – 40 CFR 355 Appendix A
None

Section 311/312 Hazard Class – 40CFR 370.2
Immediate (X) Delayed (X) Fire (X) Reactive () Sudden Release of Pressure ()

SARA 313 Components - 40 CFR 372.65

Section 313 Components(s)	CAS Number	%
Methanol	67-56-1	34

INTERNATIONAL REGULATIONS

Inventory Status – DSL (CANADA)
The international ingredients of this are listed.
WHMIS Information: B2, D1A

ECL (SOUTH KOREA)
The international ingredients of this product are listed.

EINECS (EUROPE)
The international ingredients of this product are listed.

ENCS (JAPAN)
The international ingredients of this product are listed.

State and Local Regulations – California Proposition 65

New Jersey RTK (Right-To-Know) Label information

Methyl Alcohol	67-56-1

Pennsylvania RTK (Right-To-Know) Label information

Methanol	67-56-1

Atmospheric Standards: The Clean Air Act Amendments of 1990 list methanol as a hazardous air pollutant.

SECTION 16 – OTHER INFORMATION

Information in this MSDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. The condition or methods of handling, storage, use or disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. This MSDS was prepared and is to be used only for this product.

Safety Data Sheet

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SECTION 1: Identification

1.1. Product identifier
3M™ Hi-Strength 90 Cylinder Spray Adhesive, Clear

Product Identification Numbers
62-4994-8030-9, 62-4994-8150-5, 62-4994-8300-6

1.2. Recommended use and restrictions on use

Recommended use
Adhesive, Industrial use

1.3. Supplier's details

MANUFACTURER:	3M
DIVISION:	Industrial Adhesives and Tapes Division
ADDRESS:	3M Center, St. Paul, MN 55144-1000, USA
Telephone:	1-888-3M HELPS (1-888-364-3577)

1.4. Emergency telephone number
1-800-364-3577 or (651) 737-6501 (24 hours)

SECTION 2: Hazard identification

2.1. Hazard classification
Flammable Liquid: Category 1.
Serious Eye Damage/Irritation: Category 2A.
Simple Asphyxiant.
Specific Target Organ Toxicity (single exposure): Category 1.
Specific Target Organ Toxicity (single exposure): Category 3.

2.2. Label elements
Signal word
Danger

Symbols
Flame | Exclamation mark | Health Hazard |

Pictograms



Hazard Statements
Extremely flammable liquid and vapor.

Causes serious eye irritation.
May cause drowsiness or dizziness.
May displace oxygen and cause rapid suffocation.

Causes damage to organs:
cardiovascular system |

Precautionary Statements

Prevention:
Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
Ground/bond container and receiving equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Keep container tightly closed.
Use explosion-proof electrical/ventilating/lighting equipment.
Do not breathe dust/fume/gas/mist/vapors/spray.
Use only outdoors or in a well-ventilated area.
Wear protective gloves and eye/face protection.
Do not eat, drink or smoke when using this product.
Wash thoroughly after handling.

Response:
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.
IF exposed: Call a POISON CENTER or doctor/physician.
Specific treatment (see Notes to Physician on this label).
In case of fire: Use a fire fighting agent suitable for flammable liquids such as dry chemical or carbon dioxide to extinguish.

Storage:
Store in a well-ventilated place. Keep container tightly closed.
Keep cool.
Store locked up.

Disposal:
Dispose of contents/container in accordance with applicable local/regional/national/international regulations.

Notes to Physician:
Exposure may increase myocardial irritability. Do not administer sympathomimetic drugs unless absolutely necessary.

SECTION 3: Composition/information on ingredients

Ingredient	C.A.S. No.	% by Wt
Dimethyl Ether	115-10-6	15 - 40 Trade Secret *
Non-Volatile Components	Trade Secret*	10 - 30 Trade Secret *
Pentane	109-66-0	10 - 30 Trade Secret *
Cyclohexane	110-82-7	10 - 30 Trade Secret *
Acetone	67-64-1	10 - 30 Trade Secret *
Isobutane	75-28-5	5 - 10 Trade Secret *
Propane	74-98-6	5 - 10 Trade Secret *

*The specific chemical identity and/or exact percentage (concentration) of this composition has been withheld as a trade secret.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation:
Remove person to fresh air. Get medical attention.

Skin Contact:
Immediately wash with soap and water. Remove contaminated clothing and wash before reuse. If signs/symptoms develop, get medical attention.

Eye Contact:
Immediately flush with large amounts of water. Remove contact lenses if easy to do. Continue rinsing. Get medical attention.

If Swallowed:
Rinse mouth. If you feel unwell, get medical attention.

4.2. Most important symptoms and effects, both acute and delayed
See Section 11.1. Information on toxicological effects.

4.3. Indication of any immediate medical attention and special treatment required
Exposure may increase myocardial irritability. Do not administer sympathomimetic drugs unless absolutely necessary.

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media
In case of fire: Use a fire fighting agent suitable for flammable liquids such as dry chemical or carbon dioxide to extinguish.

5.2. Special hazards arising from the substance or mixture
Closed containers exposed to heat from fire may build pressure and explode.

Hazardous Decomposition or By-Products

Substance	Condition
Aldehydes	During Combustion
Hydrocarbons	During Combustion
Carbon monoxide	During Combustion
Carbon dioxide	During Combustion

5.3. Special protective actions for fire-fighters

Water may not effectively extinguish fire; however, it should be used to keep fire-exposed containers and surfaces cool and prevent explosive rupture.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Evacuate area. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Use only non-sparking tools. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapors, in accordance with good industrial hygiene practice. Warning! A motor could be an ignition source and could cause flammable gases or vapors in the spill area to burn or explode. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

6.2. Environmental precautions
Avoid release to the environment.

6.3. Methods and material for containment and cleaning up
Contain spill. Cover spill area with a fire-extinguishing foam. An appropriate aqueous film forming foam (AFFF) is recommended. Working from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material. Mix in sufficient absorbent until it appears dry. Remember, adding an absorbent material does not remove a physical, health, or environmental hazard. Collect as much of the spilled material as possible using non-sparking tools. Place in a metal container approved for transportation by appropriate authorities. Clean up residue with an appropriate solvent selected by a qualified and authorized person. Ventilate the area with fresh air. Read and follow safety precautions on the solvent label and SDS. Seal the container. Dispose of collected material as soon as possible in accordance with applicable local/regional/national/international regulations.

SECTION 7: Handling and storage

7.1. Precautions for safe handling
For industrial or professional use only. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Use only non-sparking tools. Take precautionary measures against static discharge. Do not breathe dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Avoid release to the environment. Avoid contact with oxidizing agents (eg. chlorine, chromic acid etc.) Wear low static or properly grounded shoes. To minimize the risk of ignition, determine applicable electrical classifications for the process using this product and select specific local exhaust ventilation equipment to avoid flammable vapor accumulation. Ground/bond container and receiving equipment if there is potential for static electricity accumulation during transfer.

7.2. Conditions for safe storage including any incompatibilities
Store in a well-ventilated place. Keep cool. Keep container tightly closed. Store away from heat. Store away from acids. Store away from oxidizing agents.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits
If a component is disclosed in section 3 but does not appear in the table below, an occupational exposure limit is not available for the component.

Ingredient	C.A.S. No.	Agency	Limit type	Additional Comments
Pentane	109-66-0	ACGIH	TWA:1000 ppm	
Pentane	109-66-0	OSHA	TWA:2950 mg/m3(1000 ppm)	
Cyclohexane	110-82-7	ACGIH	TWA:100 ppm	
Cyclohexane	110-82-7	OSHA	TWA:1050 mg/m3(300 ppm)	
Dimethyl Ether	115-10-6	AIHA	TWA:1880 mg/m3(1000 ppm)	

Acetone	67-64-1	ACGIH	TWA:250 ppm;STEL:500 ppm	A4: Not class. as human carcin
Acetone	67-64-1	OSHA	TWA:2400 mg/m3(1000 ppm)	
Propane	74-98-6	ACGIH	Limit value not established:	simple asphyxiant
Propane	74-98-6	OSHA	TWA:1800 mg/m3(1000 ppm)	
Isobutane	75-28-5	ACGIH	STEL:1000 ppm	
Natural gas	75-28-5	ACGIH	Limit value not established:	

ACGIH : American Conference of Governmental Industrial Hygienists
AIHA : American Industrial Hygiene Association
CMRG : Chemical Manufacturer's Recommended Guidelines
OSHA : United States Department of Labor - Occupational Safety and Health Administration
TWA: Time-Weighted-Average
STEL: Short Term Exposure Limit
CEIL: Ceiling

8.2. Exposure controls

8.2.1. Engineering controls
Do not remain in area where available oxygen may be reduced. Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapors/spray. If ventilation is not adequate, use respiratory protection equipment. Use explosion-proof ventilation equipment.

8.2.2. Personal protective equipment (PPE)

Eye/face protection

Select and use eye/face protection to prevent contact based on the results of an exposure assessment. The following eye/face protection(s) are recommended:
Indirect Vented Goggles

Skin/hand protection
Select and use gloves and/or protective clothing approved to relevant local standards to prevent skin contact based on the results of an exposure assessment. Selection should be based on use factors such as exposure levels, concentration of the substance or mixture, frequency and duration, physical challenges such as temperature extremes, and other use conditions. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible gloves/protective clothing.
Gloves made from the following material(s) are recommended: Nitrile Rubber

Respiratory protection

An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of a full respiratory protection program. Based on the results of the exposure assessment, select from the following respirator type(s) to reduce inhalation exposure:
Half facepiece or full facepiece air-purifying respirator suitable for organic vapors
Half facepiece or full facepiece supplied-air respirator
Organic vapor respirators may have short service life.

For questions about suitability for a specific application, consult with your respirator manufacturer.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

General Physical Form:	Liquid
Odor, Color, Grade:	clear, solvent odor
Odor threshold	*No Data Available*
pH	*Not Applicable*

Melting point	*Not Applicable*
Boiling Point	<=68 ºF
Flash Point	-50 ºF [*Test Method:*Closed Cup] [*Details:*Flammable Gas]
Evaporation rate	*No Data Available*
Flammability (solid, gas)	Not Applicable
Flammable Limits(LEL)	1.2 % volume
Flammable Limits(UEL)	27 % volume
Vapor Pressure	84.7 psia [@ 68 ºF]
Vapor Density	>=1.0 [*Ref Std:*AIR=1]
Density	0.69 g/ml
Specific Gravity	0.69 [*Ref Std:*WATER=1]
Solubility in Water	Nil
Solubility- non-water	*No Data Available*
Partition coefficient: n-octanol/ water	*No Data Available*
Autoignition temperature	*No Data Available*
Decomposition temperature	*Not Applicable*
Viscosity	*Not Applicable*
Hazardous Air Pollutants	0 % weight [*Test Method:*Calculated]
VOC Less H2O & Exempt Solvents	<=592 g/l [*Test Method:*calculated SCAQMD rule 443.1]
Solids Content	10 - 30 %

SECTION 10: Stability and reactivity

10.1. Reactivity
This material may be reactive with certain agents under certain conditions - see the remaining headings in this section.

10.2. Chemical stability
Stable.

10.3. Possibility of hazardous reactions
Hazardous polymerization will not occur.

10.4. Conditions to avoid
Heat
Sparks and/or flames

10.5. Incompatible materials
Strong oxidizing agents

10.6. Hazardous decomposition products

Substance	Condition
None known.	

Refer to section 5.2 for hazardous decomposition products during combustion.

SECTION 11: Toxicological information

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. In addition, toxicological data on ingredients may not be reflected in the material classification and/or the signs and symptoms of exposure, because an ingredient may be present below the threshold for labeling, an ingredient may not be available for exposure, or the data may not be relevant to the material as a whole.

11.1. Information on Toxicological effects

Signs and Symptoms of Exposure

Based on test data and/or information on the components, this material may produce the following health effects:

Inhalation:
Intentional concentration and inhalation may be harmful or fatal.

Simple Asphyxiation: Signs/symptoms may include increased heart rate, rapid respirations, drowsiness, headache, incoordination, altered judgement, nausea, vomiting, lethargy, seizures, coma, and may be fatal.

Respiratory Tract Irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

May cause additional health effects (see below).

Skin Contact:
Mild Skin Irritation: Signs/symptoms may include localized redness, swelling, itching, and dryness.

Eye Contact:
Severe Eye Irritation: Signs/symptoms may include significant redness, swelling, pain, tearing, cloudy appearance of the cornea, and impaired vision.

Ingestion:
Gastrointestinal Irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

May cause additional health effects (see below).

Additional Health Effects:

Single exposure may cause target organ effects:
Central Nervous System (CNS) Depression: Signs/symptoms may include headache, dizziness, drowsiness, incoordination, nausea, slowed reaction time, slurred speech, giddiness, and unconsciousness.

Prolonged or repeated exposure, above recommended guidelines, may cause:
Cardiac Sensitization: Signs/symptoms may include irregular heartbeat (arrhythmia), faintness, chest pain, and may be fatal.

Toxicological Data
If a component is disclosed in section 3 but does not appear in a table below, either no data are available for that endpoint or the data are not sufficient for classification.

Acute Toxicity

Name	Route	Species	Value
Overall product	Dermal		No data available; calculated ATE >5,000 mg/kg
Overall product	Inhalation-Vapor(4 hr)		No data available; calculated ATE >50 mg/l
Overall product	Ingestion		No data available; calculated ATE >5,000 mg/kg
Dimethyl Ether	Inhalation-Gas (4 hours)	Rat	LC50 164,000 ppm
Acetone	Dermal	Rabbit	LD50 > 15,688 mg/kg
Acetone	Inhalation-Vapor (4 hours)	Rat	LC50 76 mg/l

Acetone	Ingestion	Rat	LD50 5,800 mg/kg
Pentane	Dermal	Rabbit	LD50 3,000 mg/kg
Pentane	Inhalation-Vapor (4 hours)	Rat	LC50 > 18 mg/l
Pentane	Ingestion	Rat	LD50 > 2,000 mg/kg
Isobutane	Inhalation-Gas (4 hours)	Rat	LC50 276,000 ppm
Propane	Inhalation-Gas (4 hours)	Rat	LC50 > 200,000 ppm
Cyclohexane	Dermal	Rat	LD50 > 2,000 mg/kg
Cyclohexane	Inhalation-Vapor (4 hours)	Rat	LC50 > 32.9 mg/l
Cyclohexane	Ingestion	Rat	LD50 6,200 mg/kg
Non-Volatile Components	Dermal	Rabbit	LD50 > 2,000 mg/kg
Non-Volatile Components	Ingestion	Rat	LD50 > 5,000 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Acetone	Mouse	Minimal irritation
Pentane	Rabbit	Minimal irritation
Isobutane	Professional judgement	No significant irritation
Propane	Rabbit	Minimal irritation
Cyclohexane	Rabbit	Mild irritant
Non-Volatile Components	Professional judgement	No significant irritation

Serious Eye Damage/Irritation

Name	Species	Value
Acetone	Rabbit	Severe irritant
Pentane	Rabbit	Mild irritant
Isobutane	Professional judgement	No significant irritation
Propane	Rabbit	Mild irritant
Cyclohexane	Rabbit	Mild irritant

Skin Sensitization

Name	Species	Value
Pentane	Guinea pig	Not classified

Respiratory Sensitization

For the component/components, either no data are currently available or the data are not sufficient for classification.

Germ Cell Mutagenicity

Name	Route	Value
Dimethyl Ether	In Vitro	Not mutagenic
Dimethyl Ether	In vivo	Not mutagenic
Acetone	In vivo	Not mutagenic

Acetone	In Vitro	Some positive data exist, but the data are not sufficient for classification
Pentane	In vivo	Not mutagenic
Pentane	In Vitro	Some positive data exist, but the data are not sufficient for classification
Isobutane	In Vitro	Not mutagenic
Propane	In Vitro	Not mutagenic
Cyclohexane	In Vitro	Not mutagenic
Cyclohexane	In vivo	Some positive data exist, but the data are not sufficient for classification

Carcinogenicity

Name	Route	Species	Value
Dimethyl Ether	Inhalation	Rat	Not carcinogenic
Acetone	Not Specified	Multiple animal species	Not carcinogenic

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test Result	Exposure Duration
Dimethyl Ether	Inhalation	Not classified for development	Rat	NOAEL 40,000 ppm	during organogenesis
Acetone	Ingestion	Not classified for male reproduction	Rat	NOAEL 1,700 mg/kg/day	13 weeks
Acetone	Inhalation	Not classified for development	Rat	NOAEL 5.2 mg/l	during organogenesis
Pentane	Ingestion	Not classified for development	Rat	NOAEL 1,000 mg/kg/day	during organogenesis
Pentane	Inhalation	Not classified for development	Rat	NOAEL 30 mg/l	during organogenesis
Cyclohexane	Inhalation	Not classified for female reproduction	Rat	NOAEL 24 mg/l	2 generation
Cyclohexane	Inhalation	Not classified for male reproduction	Rat	NOAEL 24 mg/l	2 generation
Cyclohexane	Inhalation	Not classified for development	Rat	NOAEL 6.9 mg/l	2 generation

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Dimethyl Ether	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Rat	LOAEL 10,000 ppm	30 minutes
Dimethyl Ether	Inhalation	cardiac sensitization	Some positive data exist, but the data are not sufficient for classification	Dog	NOAEL 100,000 ppm	5 minutes
Acetone	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
Acetone	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	
Acetone	Inhalation	immune system	Not classified	Human	NOAEL 1.19 mg/l	6 hours
Acetone	Inhalation	liver	Not classified	Guinea pig	NOAEL Not available	
Acetone	Ingestion	central nervous	May cause drowsiness or	Human	NOAEL Not	poisoning

		system depression	dizziness		available	and/or abuse
Pentane	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Multiple animal species	NOAEL Not available	not available
Pentane	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Not available	NOAEL Not available	not available
Pentane	Inhalation	cardiac sensitization	Not classified	Dog	NOAEL Not available	not available
Pentane	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Professional judgement	NOAEL Not available	not available
Isobutane	Inhalation	cardiac sensitization	Causes damage to organs	Multiple animal species	NOAEL Not available	
Isobutane	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human and animal	NOAEL Not available	
Isobutane	Inhalation	respiratory irritation	Not classified	Mouse	NOAEL Not available	
Propane	Inhalation	cardiac sensitization	Causes damage to organs	Human	NOAEL Not available	
Propane	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
Propane	Inhalation	respiratory irritation	Not classified	Human	NOAEL Not available	
Cyclohexane	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human and animal	NOAEL Not available	
Cyclohexane	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human and animal	NOAEL Not available	
Cyclohexane	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Professional judgement	NOAEL Not available	

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Dimethyl Ether	Inhalation	hematopoietic system	Not classified	Rat	NOAEL 25,000 ppm	2 years
Dimethyl Ether	Inhalation	liver	Not classified	Rat	NOAEL 20,000 ppm	30 weeks
Acetone	Dermal	eyes	Not classified	Guinea pig	NOAEL Not available	3 weeks
Acetone	Inhalation	hematopoietic system	Not classified	Human	NOAEL 3 mg/l	6 weeks
Acetone	Inhalation	immune system	Not classified	Human	NOAEL 1.19 mg/l	6 days
Acetone	Inhalation	kidney and/or bladder	Not classified	Guinea pig	NOAEL 119 mg/l	not available
Acetone	Inhalation	heart | liver	Not classified	Rat	NOAEL 45 mg/l	8 weeks
Acetone	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 900 mg/kg/day	13 weeks
Acetone	Ingestion	heart	Not classified	Rat	NOAEL 2,500 mg/kg/day	13 weeks
Acetone	Ingestion	hematopoietic system	Not classified	Rat	NOAEL 200 mg/kg/day	13 weeks
Acetone	Ingestion	liver	Not classified	Mouse	NOAEL 3,896 mg/kg/day	14 days
Acetone	Ingestion	eyes	Not classified	Rat	NOAEL 3,400	13 weeks

					mg/kg/day	
Acetone	Ingestion	respiratory system	Not classified	Rat	NOAEL 2,500 mg/kg/day	13 weeks
Acetone	Ingestion	muscles	Not classified	Rat	NOAEL 2,500 mg/kg	13 weeks
Acetone	Ingestion	skin | bone, teeth, nails, and/or hair	Not classified	Mouse	NOAEL 11,298 mg/kg/day	13 weeks
Pentane	Inhalation	peripheral nervous system	Not classified	Human	NOAEL Not available	occupational exposure
Pentane	Inhalation	heart | skin | endocrine system | bone, teeth, nails, and/or hair | hematopoietic system | liver | immune system | muscles | nervous system | eyes | kidney and/or bladder | respiratory system	Not classified	Rat	NOAEL 20 mg/l	13 weeks
Pentane	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 2,000 mg/kg/day	28 days
Isobutane	Inhalation	kidney and/or bladder	Not classified	Rat	NOAEL 4,500 ppm	13 weeks
Cyclohexane	Inhalation	liver	Not classified	Rat	NOAEL 24 mg/l	90 days
Cyclohexane	Inhalation	auditory system	Not classified	Rat	NOAEL 1.7 mg/l	90 days
Cyclohexane	Inhalation	kidney and/or bladder	Not classified	Rabbit	NOAEL 2.7 mg/l	10 weeks
Cyclohexane	Inhalation	hematopoietic system	Not classified	Mouse	NOAEL 24 mg/l	14 weeks
Cyclohexane	Inhalation	peripheral nervous system	Not classified	Rat	NOAEL 8.6 mg/l	30 weeks

Aspiration Hazard

Name	Value
Pentane	Aspiration hazard
Cyclohexane	Aspiration hazard

Please contact the address or phone number listed on the first page of the SDS for additional toxicological information on this material and/or its components.

SECTION 12: Ecological information

Ecotoxicological information

Please contact the address or phone number listed on the first page of the SDS for additional ecotoxicological information on this material and/or its components.

Chemical fate information

Please contact the address or phone number listed on the first page of the SDS for additional chemical fate information on this material and/or its components.

SECTION 13: Disposal considerations

13.1. Disposal methods

Dispose of contents/ container in accordance with the local/regional/national/international regulations.

Incinerate in a permitted waste incineration facility. As a disposal alternative, utilize an acceptable permitted waste disposal facility. Empty drums/barrels/containers used for transporting and handling hazardous chemicals (chemical substances/mixtures/preparations classified as Hazardous as per applicable regulations) shall be considered, stored, treated & disposed of as hazardous wastes unless otherwise defined by applicable waste regulations. Consult with the respective regulating authorities to determine the available treatment and disposal facilities.

EPA Hazardous Waste Number (RCRA): D001 (Ignitable)

SECTION 14: Transport Information

For Transport Information, please visit http://3M.com/Transportinfo or call 1-800-364-3577 or 651-737-6501.

SECTION 15: Regulatory information

15.1. US Federal Regulations
Contact 3M for more information.

EPCRA 311/312 Hazard Classifications:

Physical Hazards
Flammable (gases, aerosols, liquids, or solids)

Health Hazards
Serious eye damage or eye irritation
Specific target organ toxicity (single or repeated exposure)

Section 313 Toxic Chemicals subject to the reporting requirements of that section and 40 CFR part 372 (EPCRA):

Ingredient	C.A.S. No	% by Wt
Cyclohexane	110-82-7	Trade Secret 10 - 30

15.2. State Regulations
Contact 3M for more information.

15.3. Chemical Inventories
The components of this product are in compliance with the chemical notification requirements of TSCA.

Contact 3M for more information.

15.4. International Regulations
Contact 3M for more information.

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 16: Other information

NFPA Hazard Classification
Health: 2 **Flammability:** 4 **Instability:** 0 **Special Hazards:** None

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address

the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

Document Group:	23-3000-9	**Version Number:**	4.02
Issue Date:	01/19/18	**Supercedes Date:**	03/14/16

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Safety Data Sheet

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This Safety Data Sheet has been prepared in accordance with the Canadian Hazardous Products Regulations.

SECTION 1: Identification

1.1. Product identifier
3M™ Super 77 Spray Adhesive

Product Identification Numbers

62-4437-0921-7	62-4437-0922-5	62-4437-0925-8	62-4437-0926-6	62-4437-0927-4
62-4437-0928-2	62-4437-0929-0	62-4437-0930-8	62-4437-0931-6	62-4437-0933-2
62-4437-0934-0	62-4437-4026-1	62-4437-4030-3	62-4437-4830-6	62-4437-4835-5
62-4437-4840-5	62-4437-4920-5	62-4437-4921-3	62-4437-4925-4	62-4437-4926-2
62-4437-4930-4	62-4437-4931-2	62-4437-4933-8	62-4437-4935-3	62-4437-4936-1
62-4437-4937-9	62-4437-4938-7	62-4437-4939-5	62-4437-4950-2	62-4437-4955-1
62-4437-9999-4	AS-0192-9224-7	CS-0406-2131-3	CS-0406-6984-1	CS-0406-7003-9
H0-0015-4394-3	H0-0016-4533-4	LT-0000-8922-8	UU-0040-2681-9	XT-0615-9197-7

1.2. Recommended use and restrictions on use

Recommended use
Aerosol Adhesive, Industrial use

Restrictions on use
Not Applicable

1.3. Supplier's details

Company:	3M Canada Company
Division:	Industrial Adhesives and Tapes Division
Address:	1840 Oxford Street East, Post Office Box 5757, London, Ontario N6A 4T1
Telephone:	(800) 364-3577
Website:	www.3M.ca

1.4. Emergency telephone number
Medical Emergency Telephone: (519) 451-2500, Ext. 2222; Transportation Emergency Telephone (CANUTEC): (613) 996-6666

SECTION 2: Hazard identification

The following product identification number(s) are sold in the consumer market place:
CS-0406-7294-4, CS-0406-7057-5

2.1. Classification of the substance or mixture
Flammable Aerosol: Category 1.
Gas Under Pressure: Liquefied gas.
Reproductive Toxicity: Category 2.
Simple Asphyxiant.
Specific Target Organ Toxicity (single exposure): Category 1.
Specific Target Organ Toxicity (single exposure): Category 3.

2.2. Label elements
Signal word
Danger

Symbols
Flame | Gas cylinder | Exclamation mark | Health Hazard |

Pictograms



Hazard statements
Extremely flammable aerosol. Contains gas under pressure; may explode if heated.
May cause drowsiness or dizziness. Suspected of damaging fertility or the unborn child. May displace oxygen and cause rapid suffocation.
Causes damage to organs: cardiovascular system |

Precautionary statements

Prevention:
Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Do not spray on an open flame or other ignition source. Do not pierce or burn, even after use. Do not breathe dust/fume/gas/mist/vapours/spray. Use only outdoors or in a well-ventilated area. Wear protective gloves. Do not eat, drink or smoke when using this product. Wash thoroughly after handling.

Response:
IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF exposed or concerned: Get medical advice/attention.

Storage:
Protect from sunlight. Do not expose to temperatures exceeding 50C/122F. Store in a well-ventilated place. Keep container tightly closed. Store locked up.

Disposal:
Dispose of contents/container in accordance with applicable local/regional/national/international regulations.

2.3. Other hazards
None known.

18% of the mixture consists of ingredients of unknown acute dermal toxicity.
18% of the mixture consists of ingredients of unknown acute inhalation toxicity.

SECTION 3: Composition/information on ingredients

This material is a mixture.

Ingredient	C.A.S. No.	% by Wt
Non-Hazardous Components	Trade Secret	15 - 40
Cyclohexane	110-82-7	10 - 30
Hydroteated light naptha (petroleum)	64742-49-0	10 - 30
Dimethyl Ether	115-10-6	7 - 13
Isobutane	75-28-5	7 - 13
Propane	74-98-6	7 - 13
Hexane	110-54-3	< 1

Non-Hazardous Components is a non-hazardous Trade Secret material according to WHMIS criteria.
Hydroteated light naptha (petroleum) is a hazardous Trade Secret material according to WHMIS criteria. Refer to Section 15 for further information.
Cyclohexane is a hazardous Trade Secret material according to WHMIS criteria. Refer to Section 15 for further information.
Dimethyl Ether is a hazardous Trade Secret material according to WHMIS criteria. Refer to Section 15 for further information.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation:
Remove person to fresh air. Get medical attention.

Skin Contact:
Wash with soap and water. If signs/symptoms develop, get medical attention.

Eye Contact:
Flush with large amounts of water. Remove contact lenses if easy to do. Continue rinsing. If signs/symptoms persist, get medical attention.

If Swallowed:
Rinse mouth. If you feel unwell, get medical attention.

4.2. Most important symptoms and effects, both acute and delayed
See Section 11.1. Information on toxicological effects.

4.3. Indication of any immediate medical attention and special treatment required
Exposure may increase myocardial irritability. Do not administer sympathomimetic drugs unless absolutely necessary.

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media
Use a fire fighting agent suitable for the surrounding fire.

5.2. Special hazards arising from the substance or mixture
None inherent in this product.

Hazardous Decomposition or By-Products

Substance	Condition

Aldehydes	During Combustion
Carbon monoxide	During Combustion
Carbon dioxide	During Combustion
Toxic Vapor, Gas, Particulate	During Combustion

5.3. Special protective actions for fire-fighters
No special protective actions for fire-fighters are anticipated.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Evacuate area. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Use only non-sparking tools. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapours, in accordance with good industrial hygiene practice. Warning! A motor could be an ignition source and could cause flammable gases or vapours in the spill area to burn or explode. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

6.2. Environmental precautions
Avoid release to the environment.

6.3. Methods and material for containment and cleaning up
If possible, seal leaking container. Place leaking containers in a well-ventilated area, preferably an operating exhaust hood, or if necessary outdoors on an impermeable surface until appropriate packaging for the leaking container or its contents is available. Cover spill area with a fire-extinguishing foam. An appropriate aqueous film forming foam (AFFF) is recommended. Collect as much of the spilled material as possible using non-sparking tools. Dispose of collected material as soon as possible.

SECTION 7: Handling and storage

7.1. Precautions for safe handling
For industrial or professional use only. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Do not spray on an open flame or other ignition source. Do not pierce or burn, even after use. Do not breathe dust/fume/gas/mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Avoid release to the environment. Avoid contact with oxidizing agents (eg. chlorine, chromic acid etc.) Use personal protective equipment (gloves, respirators, etc.) as required.

7.2. Conditions for safe storage including any incompatibilities
Store in a well-ventilated place. Keep container tightly closed. Protect from sunlight. Do not expose to temperatures exceeding 50C/122F. Protect from sunlight. Store in a well-ventilated place. Store away from heat. Store away from acids. Store away from oxidizing agents.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits
If a component is disclosed in section 3 but does not appear in the table below, an occupational exposure limit is not available for the component.

Ingredient	C.A.S. No.	Agency	Limit type	Additional Comments
Hexane	110-54-3	ACGIH	TWA:50 ppm	SKIN
Cyclohexane	110-82-7	ACGIH	TWA:100 ppm	
Dimethyl Ether	115-10-6	AIHA	TWA:1880 mg/m3(1000 ppm)	

Propane	74-98-6	ACGIH	Limit value not established:	
Natural gas	75-28-5	ACGIH	Limit value not established:	
Isobutane	75-28-5	ACGIH	STEL:1000 ppm	

ACGIH : American Conference of Governmental Industrial Hygienists
AIHA : American Industrial Hygiene Association
CMRG : Chemical Manufacturer's Recommended Guidelines
TWA: Time-Weighted-Average
STEL: Short Term Exposure Limit
CEIL: Ceiling

8.2. Exposure controls

8.2.1. Engineering controls
Do not remain in area where available oxygen may be reduced. Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapours/spray. If ventilation is not adequate, use respiratory protection equipment.

8.2.2. Personal protective equipment (PPE)

Eye/face protection

Select and use eye/face protection to prevent contact based on the results of an exposure assessment. The following eye/face protection(s) are recommended:
Safety Glasses with side shields

Skin/hand protection
Select and use gloves and/or protective clothing approved to relevant local standards to prevent skin contact based on the results of an exposure assessment. Selection should be based on use factors such as exposure levels, concentration of the substance or mixture, frequency and duration, physical challenges such as temperature extremes, and other use conditions. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible gloves/protective clothing.
Gloves made from the following material(s) are recommended: Nitrile Rubber

Respiratory protection

An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of a full respiratory protection program. Based on the results of the exposure assessment, select from the following respirator type(s) to reduce inhalation exposure:
Half facepiece or full facepiece air-purifying respirator suitable for organic vapors

For questions about suitability for a specific application, consult with your respirator manufacturer.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Gas
Appearance/Odour	light cream coloured, sweet/fruity odour.
Odour threshold	*No Data Available*
pH	*Not Applicable*
Melting point/Freezing point	*No Data Available*
Flash Point	-41.1 ºC [*Test Method:*Tagliabue Closed Cup]
Evaporation rate	1.9 [*Ref Std:*ETHER=1]
Flammability (solid, gas)	Flammable Aerosol: Category 1.
Flammable Limits(LEL)	Approximately 1.5 % volumen
Flammable Limits(UEL)	Approximately 8.6 % volumen
Vapour Density	2.97 [*Ref Std:*AIR=1]
Density	0.697 g/ml

Relative density	0.697 [*Ref Std:*WATER=1]
Water solubility	Nil
Solubility- non-water	*No Data Available*
Partition coefficient: n-octanol/ water	*No Data Available*
Autoignition temperature	*No Data Available*
Decomposition temperature	*Not Applicable*
Viscosity	*Not Applicable*
Molecular weight	*No Data Available*
Volatile Organic Compounds	75 % [*Test Method:*calculated per CARB title 2]
Heat of Combustion	<=43.5 kJ/g
Solids Content	15 - 40 %

SECTION 10: Stability and reactivity

10.1. Reactivity
This material may be reactive with certain agents under certain conditions - see the remaining headings in this section.

10.2. Chemical stability
Stable.

10.3. Possibility of hazardous reactions
Hazardous polymerization will not occur.

10.4. Conditions to avoid
Heat

10.5. Incompatible materials
Strong oxidizing agents

10.6. Hazardous decomposition products

Substance	Condition
None known.	

Refer to section 5.2 for hazardous decomposition products during combustion.

SECTION 11: Toxicological information

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. In addition, toxicological data on ingredients may not be reflected in the material classification and/or the signs and symptoms of exposure, because an ingredient may be present below the threshold for labeling, an ingredient may not be available for exposure, or the data may not be relevant to the material as a whole.

11.1. Information on Toxicological effects

Signs and Symptoms of Exposure

Based on test data and/or information on the components, this material may produce the following health effects:

Inhalation:
Intentional concentration and inhalation may be harmful or fatal. Simple Asphyxiation: Signs/symptoms may include increased heart rate, rapid respirations, drowsiness, headache, incoordination, altered judgement, nausea, vomiting, lethargy, seizures, coma, and may be fatal. Respiratory Tract Irritation: Signs/symptoms may include cough, sneezing, nasal

discharge, headache, hoarseness, and nose and throat pain. May cause additional health effects (see below).

Skin Contact:
Prolonged or repeated exposure may cause:
Dermal Defatting: Signs/symptoms may include localized redness, itching, drying and cracking of skin.

Eye Contact:
Contact with the eyes during product use is not expected to result in significant irritation.

Ingestion:
Gastrointestinal Irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.
May cause additional health effects (see below).

Additional Health Effects:

Single exposure may cause target organ effects:
Central Nervous System (CNS) Depression: Signs/symptoms may include headache, dizziness, drowsiness, incoordination, nausea, slowed reaction time, slurred speech, giddiness, and unconsciousness.
Single exposure, above recommended guidelines, may cause:
Cardiac Sensitization: Signs/symptoms may include irregular heartbeat (arrhythmia), faintness, chest pain, and may be fatal.

Reproductive/Developmental Toxicity:
Contains a chemical or chemicals which can cause birth defects or other reproductive harm.

Toxicological Data
If a component is disclosed in section 3 but does not appear in a table below, either no data are available for that endpoint or the data are not sufficient for classification.

Acute Toxicity

Name	Route	Species	Value
Overall product	Dermal		No data available; calculated ATE >5,000 mg/kg
Overall product	Inhalation-Vapor(4 hr)		No data available; calculated ATE >50 mg/l
Overall product	Ingestion		No data available; calculated ATE >5,000 mg/kg
Hydroteated light naptha (petroleum)	Dermal	Rabbit	LD50 > 3,160 mg/kg
Hydroteated light naptha (petroleum)	Inhalation-Vapor (4 hours)	Rat	LC50 > 14.7 mg/l
Hydroteated light naptha (petroleum)	Ingestion	Rat	LD50 > 5,000 mg/kg
Isobutane	Inhalation-Gas (4 hours)	Rat	LC50 276,000 ppm
Propane	Inhalation-Gas (4 hours)	Rat	LC50 > 200,000 ppm
Cyclohexane	Dermal	Rat	LD50 > 2,000 mg/kg
Cyclohexane	Inhalation-Vapor (4 hours)	Rat	LC50 > 32.9 mg/l
Cyclohexane	Ingestion	Rat	LD50 6,200 mg/kg
Non-Hazardous Components	Dermal		LD50 estimated to be > 5,000 mg/kg
Non-Hazardous Components	Ingestion		LD50 estimated to be 2,000 - 5,000 mg/kg
Dimethyl Ether	Inhalation-Gas (4 hours)	Rat	LC50 164,000 ppm
Hexane	Dermal	Rabbit	LD50 > 2,000 mg/kg
Hexane	Inhalation-Vapor (4 hours)	Rat	LC50 170 mg/l

Hexane	Ingestion	Rat	LD50 > 28,700 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Overall product		Minimal irritation
Hydroteated light naptha (petroleum)	Rabbit	Irritant
Isobutane	Professional judgement	No significant irritation
Propane	Rabbit	Minimal irritation
Cyclohexane	Rabbit	Mild irritant
Non-Hazardous Components	Professional judgement	Minimal irritation
Hexane	Human and animal	Mild irritant

Serious Eye Damage/Irritation

Name	Species	Value
Hydroteated light naptha (petroleum)	Rabbit	Mild irritant
Isobutane	Professional judgement	No significant irritation
Propane	Rabbit	Mild irritant
Cyclohexane	Rabbit	Mild irritant
Hexane	Rabbit	Mild irritant

Skin Sensitization

Name	Species	Value
Hydroteated light naptha (petroleum)	Guinea pig	Not classified
Hexane	Human	Not classified

Respiratory Sensitization

For the component/components, either no data are currently available or the data are not sufficient for classification.

Germ Cell Mutagenicity

Name	Route	Value
Hydroteated light naptha (petroleum)	In Vitro	Not mutagenic
Isobutane	In Vitro	Not mutagenic
Propane	In Vitro	Not mutagenic
Cyclohexane	In Vitro	Not mutagenic
Cyclohexane	In vivo	Some positive data exist, but the data are not sufficient for classification
Dimethyl Ether	In Vitro	Not mutagenic
Dimethyl Ether	In vivo	Not mutagenic
Hexane	In Vitro	Not mutagenic
Hexane	In vivo	Not mutagenic

Carcinogenicity

Name	Route	Species	Value
Hydroteated light naptha (petroleum)	Inhalation	Mouse	Some positive data exist, but the data are not sufficient for classification
Dimethyl Ether	Inhalation	Rat	Not carcinogenic

Hexane	Dermal	Mouse	Not carcinogenic
Hexane	Inhalation	Mouse	Some positive data exist, but the data are not sufficient for classification

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test result	Exposure Duration
Cyclohexane	Inhalation	Not classified for female reproduction	Rat	NOAEL 24 mg/l	2 generation
Cyclohexane	Inhalation	Not classified for male reproduction	Rat	NOAEL 24 mg/l	2 generation
Cyclohexane	Inhalation	Not classified for development	Rat	NOAEL 6.9 mg/l	2 generation
Dimethyl Ether	Inhalation	Not classified for development	Rat	NOAEL 40,000 ppm	during organogenesis
Hexane	Ingestion	Not classified for development	Mouse	NOAEL 2,200 mg/kg/day	during organogenesis
Hexane	Inhalation	Not classified for development	Rat	NOAEL 0.7 mg/l	during gestation
Hexane	Ingestion	Toxic to male reproduction	Rat	NOAEL 1,140 mg/kg/day	90 days
Hexane	Inhalation	Toxic to male reproduction	Rat	LOAEL 3.52 mg/l	28 days

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
Hydroteated light naptha (petroleum)	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human and animal	NOAEL Not available	
Hydroteated light naptha (petroleum)	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification		NOAEL Not available	
Hydroteated light naptha (petroleum)	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Professional judgement	NOAEL Not available	
Isobutane	Inhalation	cardiac sensitization	Causes damage to organs	Multiple animal species	NOAEL Not available	
Isobutane	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human and animal	NOAEL Not available	
Isobutane	Inhalation	respiratory irritation	Not classified	Mouse	NOAEL Not available	
Propane	Inhalation	cardiac sensitization	Causes damage to organs	Human	NOAEL Not available	
Propane	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
Propane	Inhalation	respiratory irritation	Not classified	Human	NOAEL Not available	
Cyclohexane	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human and animal	NOAEL Not available	
Cyclohexane	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human and animal	NOAEL Not available	
Cyclohexane	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Professional judgeme	NOAEL Not available	

				nt		
Dimethyl Ether	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Rat	LOAEL 10,000 ppm	30 minutes
Dimethyl Ether	Inhalation	cardiac sensitization	Some positive data exist, but the data are not sufficient for classification	Dog	NOAEL 100,000 ppm	5 minutes
Hexane	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	not available
Hexane	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Rabbit	NOAEL Not available	8 hours
Hexane	Inhalation	respiratory system	Not classified	Rat	NOAEL 24.6 mg/l	8 hours

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
Isobutane	Inhalation	kidney and/or bladder	Not classified	Rat	NOAEL 4,500 ppm	13 weeks
Cyclohexane	Inhalation	liver	Not classified	Rat	NOAEL 24 mg/l	90 days
Cyclohexane	Inhalation	auditory system	Not classified	Rat	NOAEL 1.7 mg/l	90 days
Cyclohexane	Inhalation	kidney and/or bladder	Not classified	Rabbit	NOAEL 2.7 mg/l	10 weeks
Cyclohexane	Inhalation	hematopoietic system	Not classified	Mouse	NOAEL 24 mg/l	14 weeks
Cyclohexane	Inhalation	peripheral nervous system	Not classified	Rat	NOAEL 8.6 mg/l	30 weeks
Dimethyl Ether	Inhalation	hematopoietic system	Not classified	Rat	NOAEL 25,000 ppm	2 years
Dimethyl Ether	Inhalation	liver	Not classified	Rat	NOAEL 20,000 ppm	30 weeks
Hexane	Inhalation	peripheral nervous system	Causes damage to organs through prolonged or repeated exposure	Human	NOAEL Not available	occupational exposure
Hexane	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification	Mouse	LOAEL 1.76 mg/l	13 weeks
Hexane	Inhalation	liver	Not classified	Rat	NOAEL Not available	6 months
Hexane	Inhalation	kidney and/or bladder	Not classified	Rat	LOAEL 1.76 mg/l	6 months
Hexane	Inhalation	hematopoietic system	Not classified	Mouse	NOAEL 35.2 mg/l	13 weeks
Hexane	Inhalation	auditory system | immune system | eyes	Not classified	Human	NOAEL Not available	occupational exposure
Hexane	Inhalation	heart | skin | endocrine system	Not classified	Rat	NOAEL 1.76 mg/l	6 months
Hexane	Ingestion	peripheral nervous system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 1,140 mg/kg/day	90 days
Hexane	Ingestion	endocrine system | hematopoietic system | liver | immune system | kidney and/or bladder	Not classified	Rat	NOAEL Not available	13 weeks

Aspiration Hazard

Name	Value
Hydroteated light naptha (petroleum)	Aspiration hazard
Cyclohexane	Aspiration hazard
Hexane	Aspiration hazard

Please contact the address or phone number listed on the first page of the SDS for additional toxicological information

on this material and/or its components.

SECTION 12: Ecological information

No data available.

SECTION 13: Disposal considerations

Dispose of contents/ container in accordance with the local/regional/national/international regulations.

SECTION 14: Transport Information

For Transport Information, please visit http://3M.com/Transportinfo or call 1-800-364-3577 or 651-737-6501.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Global inventory status

Contact 3M for more information. The components of this material are in compliance with the provisions of the Korea Chemical Control Act. Certain restrictions may apply. Contact the selling division for additional information. The components of this material are in compliance with the provisions of Australia National Industrial Chemical Notification and Assessment Scheme (NICNAS). Certain restrictions may apply. Contact the selling division for additional information. The components of this material are in compliance with the provisions of Japan Chemical Substance Control Law. Certain restrictions may apply. Contact the selling division for additional information. The components of this material are in compliance with the provisions of Philippines RA 6969 requirements. Certain restrictions may apply. Contact the selling division for additional information. The components of this product are in compliance with the new substance notification requirements of CEPA. The components of this product are in compliance with the chemical notification requirements of TSCA.

Trade Secret Information:

HMIRA Registry Number:	Filing date:	Claim status:	Date of decision:
9906	11-04-2016	Claim for exemption has been filed.	

SECTION 16: Other information

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

Health: 2 **Flammability:** 4 **Instability:** 0 **Special Hazards:** None
Aerosol Storage Code: 3

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

HMIS Hazard Classification

Health: 2 **Flammability:** 4 **Physical Hazard:** 0 **Personal Protection:** X - See PPE section.

Hazardous Material Identification System (HMIS® IV) hazard ratings are designed to inform employees of chemical hazards in the workplace. These ratings are based on the inherent properties of the material under expected conditions of normal use and are not intended for use in emergency situations. HMIS® IV ratings are to be used with a fully implemented HMIS® IV program. HMIS® is a registered mark of the American Coatings Association (ACA).

Document group:	11-4257-9	**Version number:**	31.01
Issue Date:	2017/05/16	**Supercedes Date:**	2016/11/17

The information in this Safety Data Sheet (SDS) is believed to be correct as of the date issued. 3M MAKES NO WARRANTIES, EXPRESS OR IMPLIED, STATUTORY OR OTHERWISE, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OR CONDITION OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY IMPLIED WARRANTY OR CONDITION ARISING OUT OF A COURSE OF PERFORMANCE, COURSE OF DEALING, CUSTOM OR USAGE OF TRADE. User is responsible for determining whether the 3M product is fit for a particular purpose and suitable for user's method of use or application. Given the variety of factors that can affect the use and application of a 3M product, some of which are uniquely within the user's knowledge and control, it is essential that the user evaluate the 3M product to determine whether it is fit for a particular purpose and suitable for user's method of use or application.

3M Canada SDSs are available at www.3M.ca

TEXACO INC.
INDUSTRIAL HYGIENE, TOXICOLOGY, AND MATERIAL SAFETY DATA SHEET

NOTE: NO REPRESENTATION IS MADE AS TO THE ACCURACY OF THE INFORMATION HEREIN. SEE PAGE 7 FOR CONDITIONS UNDER WHICH DATA ARE FURNISHED.

Trade Name and Synonyms
00352 LEADED REGULAR GASOLINE

Manufacturer's Name
Texaco Inc.

Emergency Telephone No.
(914) 831-3400 ext. 204

Address
P.O. Box 509 Beacon, NY 12508

Chemical Name and/or Family or Description
Automotive Leaded Gasoline

THIS PRODUCT IS CLASSIFIED AS:
X HAZARDOUS BY DEFINITION NO.(S) 1,2,5,10
____ NOT HAZARDOUS
____ ON ATTACHED EXPLANATION SHEETS

WARNING STATEMENT:
DANGER! EXTREMELY FLAMMABLE
HARMFUL OR FATAL IF SWALLOWED
MAY BE HARMFUL IF INHALED; MAY CAUSE IRRITATION
MAY BE HARMFUL IF ABSORBED THROUGH SKIN

OCCUPATIONAL CONTROL PROCEDURES

Protective Equipment (Type)

Eyes: Chemical type goggles or face shield optional.

Skin: Protective clothing such as uniforms, coveralls or lab coats should be worn. Launder or dry clean when soiled. Gloves resistant to chemicals and petroleum distillates required.

Inhalation: SCBA or supplied air respiratory protection required for entry into tanks,vessels, or other confined spaces containing gasoline.

Ventilation: Adequate to meet permissible concentrations.

Permissible Concentrations:

Air: TWA for gasoline is 300 ppm (ACGIH 1985-86). Texaco recommends a TWA of 100 ppm.

EMERGENCY AND FIRST AID PROCEDURES

First Aid

Eyes: Flush with water for fifteen minutes.

Skin: Wash exposed areas with soap and water.

Ingestion: Do NOT induce vomiting. May cause chemical pneumonitis. Call a physician.

Inhalation: Should symptoms noted under physiological effects occur, remove to fresh air. If not breathing, apply artificial respiration.

Other Instructions: Remove gasoline-soaked clothing.

N.D. - Not Determined N.A. - Not Applicable
< - Less Than > - Greater Than

PHYSIOLOGICAL EFFECTS:

Code No. 00352

Effects of Exposure

Acute:

Eyes: Causes slight-moderate eye irritation.

Skin: Moderately irritating; causes redness, edema, or drying of the skin.

Respiratory System: May cause dizziness, irritation of eyes, nose and throat, vomiting, bluish color of the skin, and CNS effects. See A.C., p.6.

Chronic: Recent studies with laboratory animals have shown that gasoline vapors caused kidney damage and kidney cancer in rats and liver cancer in mice.

Other: -

Sensitization Properties:

Skin: Yes ___ No X Unknown ___ Respiratory: Yes ___ No X Unknown ___

Median Lethal Dose (LD_{50} LC_{50}) (Species)

Oral: Similar product, LD50 = 18.75 ml/kg (rat), practically nontoxic

Inhalation: N.D.

Dermal: Similar product, >5 ml/kg (rabbit), practically nontoxic

Other: N. D.

Irritation Index, Estimation of Irritation (Species)

Skin: Similar product, 0.98/8.0 (rabbit), slightly irritating

Eyes: Similar product, 0/110 (rabbit), minimally irritating

Symptoms of Exposure: See Additional Comments.

FIRE PROTECTION INFORMATION

Ignition Temp. °F. 850 F Flash Point °F. (Method) -40F (COC)

Flammable Limits (%) Lower 1.4% Upper 7.6%

Products Evolved When Subjected to Heat or Combustion:

Carbon monoxide and carbon dioxide may be formed on burning in limited air supply.

Recommended Fire Extinguishing Agents And Special Procedures:

According to the National Fire Protection Association Guide 325M, use dry chemical, foam or carbon dioxide. Water may be ineffective on the flames, but water should be used to keep fire-exposed containers cool. If a leak or spill has not ignited, use water spray to disperse the vapors and to provide protection for the persons attempting to stop the leak.

Unusual or Explosive Hazards:

Flowing gasoline can be ignited by self-generated static electricity; use adequate grounding.

N.D. - Not Determined N.A. - Not Applicable

< - Less Than > - Greater Than

ENVIRONMENTAL PROTECTION

Code No. 00352

Waste Disposal Method:
Re-evaluation of the product may be required by the user at the time of disposal, since the product uses, transformations, mixtures and processes may change classification to non-hazardous or hazardous for reasons other than, or in addition to ignitability. (See Remarks for Waste Classification.)

Procedures in Case of Breakage or Leakage: (Transportation Spills Call CHEMTREC (800) 424-9300)
Eliminate all ignition sources including internal combustion engines and power tools. Ventilate area. Avoid breathing vapor. Use SCBA or supplied-air mask for large spills in confined areas. Contain spill if possible. Remove with inert absorbent.

Remarks:
Waste Classification: Product (as presently constituted) has the RCRA characteristic of ignitability and if discarded in its purchased form would have the hazardous waste number D001.

PRECAUTIONS

DANGER! EXTREMELY FLAMMABLE
HARMFUL OR FATAL IF SWALLOWED
MAY BE HARMFUL IF INHALED; MAY CAUSE IRRITATION
MAY BE HARMFUL IF ABSORBED THROUGH SKIN
Long term exposure to vapors has caused cancer in laboratory animals. Keep away from heat, sparks and flame.
Avoid breathing vapor. Use only in well-ventilated locations.
Avoid contact with eyes and prolonged contact with skin.
Keep container closed. Wash thoroughly after handling.
FOR USE AS MOTOR FUEL ONLY; CONTAINS LEAD-ANTIKNOCK COMPOUNDS

Requirements for Transportation, Handling and Storage:
Transport, handle and store in accordance with OSHA Regulation 1910.106, and applicable D.O.T. regulations.

DOT Proper Shipping Name: Gasoline
DOT Hazard Class (if applicable): Flammable liquid, UN 1203

CHEMICAL AND PHYSICAL PROPERTIES

Boiling Point (°F) GT90 Vapor Pressure GT-350 (mmHg)

Specific Gravity 0.7-.78 (H_2O=1) Vapor Density 3-4.0 (Air=1)

Appearance and Odor Light straw to light red liquid

pH of undiluted product N.A. Solubility slight

Percent Volatile by Volume 100 Evaporation N.D. ( )=1

Viscosity L.T. 1.4 cSt @ 100F Other -

Hazardous Polymerizations ____ Occur X Do not occur

The Material Reacts Violently With: (If others is checked below, see additional comments on page 6 for futher details)

Air	Water	Heat	Strong Oxidizers	Others	None of These
		X	X		

N.D. - Not Determined N.A. - Not Applicable
< - Less Than > - Greater Than

COMPOSITION

Code No. 00352

Chemical/Common Name	CAS No.	Exposure Limit	Range in %
*Gasoline consists mainly of straight chain and branched paraffin-ic hydrocarbons , olefins, cycloparaffins and aromatics. The benzene content normally varies from 0.2-5.0% with a typical value of 1.4%. The lead content may vary in compliance with EPA and state regulations.		100 ppm TWA - Texaco	95.00 - 99.99
*Benzene	71432	10ppm TWA ACGIH 10ppm TWA OSHA	4.00 - 10.99

*Hazardous according to OSHA (1910.1200) or one or more state Right-To-Know lists.

PRODUCT SHIPPING LABEL	Code No. 00352

00352 LEADED REGULAR GASOLINE

DANGER! EXTREMELY FLAMMABLE
HARMFUL OR FATAL IF SWALLOWED
MAY BE HARMFUL IF INHALED; MAY CAUSE IRRITATION
MAY BE HARMFUL IF ABSORBED THROUGH SKIN
Long term exposure tc vapors has caused cancer in laboratory animals. Keep away from heat, sparks and flame.
Avoid breathing vapor.Use only in well-ventilated locations.
Avoid contact with eyes and prolonged contact with skin.
Keep container closed. Wash thoroughly after handling.
FOR USE AS MOTOR FUEL ONLY;CONTAINS LEAD-ANTIKNOCK COMPOUNDS

If swallowed, DO NOT induce vomiting. Call a physician immediately. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Wash skin with soap and plenty of water. Gasoline-soaked clothing should be removed and laundered before reuse.

In case of fire use water spray, foam, dry chemical or CO2.

Chemical/Common Name	CAS No.	Range in %
*Gasoline consists mainly of straight chain and branched paraffinic hydrocarbons, olefins, cycloparaffins and aromatics. The benzene content normally varies from 0.2-5.0% with a typical value of 1.4%. The lead content may vary in compliance with EPA and state regulations.		95.00 - 99.99
*Benzene	71432	4.00 - 10.99

*Hazardous according to OSHA (1910.1200) or one or more state Right-To-Know lists.

HMIS
Health : 2 Reactivity : 0
Flammability: 4 Special : -

DOT Proper Shipping Name: Gasoline
DOT Hazardous Class : Flammable liquid, UN 1203

CAUTION: Misuse of empty containers can be hazardous. Empty containers can be hazardous if used to store toxic, flammable, or reactive materials. Cutting or welding of empty containers might cause fire, explosion or toxic fumes from residues. Do not pressurize or expose to open flame or heat. Keep container closed and drum bungs in place.

HEALTH EMERGENCY TELEPHONE: (914) 831-3400 (EXT. 204)

Texaco Inc.
2000 Westchester Avenue
White Plains, New York 10650

For Additional Information Concerning:

Fuels/Lubricants/Antifreezes
call (914) 831-3400 (EXT.204)
Chemicals/Additives
call (409) 722-6381
Transportation Spills
call CHEMTREC (800) 424-9300

ADDITIONAL COMMENTS

Code No. 00352

TEXACO INTENDS TO COMPLY FULLY WITH PROVISIONS OF THE TOXIC SUBSTANCES CONTROL ACT
STATE OF MICHIGAN CRITICAL MATERIALS ACT (REVISED 1985)
1.4% benzene, 0.1% lead

Other effects of inhalation include central nervous system effects such as contracted pupils, loss of reflexes, convulsions, seizures, sudden loss of consciousness, coma and sudden death. Other indications of overexposure are headaches, flushing of the face, nausea, mental confusion and depression, loss of appetite, blurred speech and difficulty in swallowing.
This product is intended for motor fuel only. May contain oxygenates such as tertiary butyl alcohol and methyl tertiary butyl ether.

To determine applicability or effect of any law or regulation with respect to the product, users should consult his legal advisor or the appropriate government agency. Texaco does not undertake to furnish advice on such matters.

By R. T. Richards Title Mgr. Env. Conservation & Toxicology

Date 05-27-86 ☐ New ☒ Revised, Supersedes 04-16-86

N.D. - Not Determined N.A. - Not Applicable
< - Less Than > - Greater Than

Powers Fasteners, Inc.
Brewster, NY 10509

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

AC 100+, Comp. A

1.2 Relevant identified uses of the substance or mixture and uses advised against

1.2.1 Relevant uses

Adhesive mortar for fastening to concrete elements A-Component (Resin)

1.2.2 Uses advised against

None known.

1.3 Details of the supplier of the safety data sheet

Company

Powers Fasteners, Inc.
2 Powers Lane
Brewster, NY 10509 / USA
Phone +1 800-524-3244
Fax +1 877-871-1965

Address enquiries to

Safety Data Sheet sdb@chemiebuero.de

1.4 Emergency telephone number

Advisory body

Chemtrec: 1-800-424-9300 (Within Continental USA);
Chemtrec: 703-527-3887 (Outside USA).

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Skin Sens. 1: H317 May cause an allergic skin reaction.
STOT SE 3: H335 May cause respiratory irritation.

2.2 Label elements

The product is required to be labelled in accordance with GHS-Directives.

Hazard pictograms



Signal word WARNING

Contains: Ethylene dimethacrylate

Methacrylic acid, monoester with Propan-1,2-diole

Hazard statements

H317 May cause an allergic skin reaction.
H335 May cause respiratory irritation.

Precautionary statements

P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves.
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
P363 Wash contaminated clothing before reuse.
P405 Store locked up.
P501 Dispose of contents/container to in accordance with local/regional/national/international regulation.

2.3 Other hazards

Human health dangers Persons already sensitised to methacrylates may develop allergic reactions when using this product.

Environmental hazards Does not contain any PBT or vPvB substances.

Other hazards Further hazards were not determined with the current level of knowledge.

SECTION 3: Composition / Information on ingredients

Product-type:

The product is a mixture.

Range [%]	Substance
10 - <20	Ethylene dimethacrylate
	CAS: 97-90-5
	GHS: STOT SE 3: H335 - Skin Sens. 1: H317
1 - <10	Methacrylic acid, monoester with Propan-1,2-diole
	CAS: 27813-02-1
	GHS: Eye Irrit. 2: H319 - Skin Sens. 1: H317
1 - <5	Quartz (< 10µm)
	CAS: 14808-60-7
	GHS: STOT RE 1: H372
0,1 - <1	1,1'-(p-Tolylimino)dipropan-2-ol
	CAS: 38668-48-3
	GHS: Acute Tox. 2: H300 - Eye Irrit. 2: H319 - Aquatic Chronic 3: H412

Comment on component parts

The quartz in this preparation is not available on foreseeable use.
Substances of Very High Concern - SVHC: substances are not contained or are below 0,1%.
For full text of H-statements: see SECTION 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General information

Take off contaminated clothing and wash before reuse.

Inhalation

Ensure supply of fresh air.
In the event of symptoms seek medical treatment.

Skin contact

In case of contact with skin wash off immediately with soap and water.
Consult a doctor if skin irritation persists.

Eye contact

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.

Ingestion

Supply with medical care.
Rinse out mouth and give plenty of water to drink.

4.2 Most important symptoms and effects, both acute and delayed

Irritant effects
Allergic reactions

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media

Carbon dioxide.
Dry powder.
Water spray jet.

Extinguishing media that must not be used

Full water jet
Foam.

5.2 Special hazards arising from the substance or mixture

In the event of fire the following can be released:
Carbon monoxide (CO)

5.3 Advice for firefighters

Do not inhale explosion and/or combustion gases.
Use self-contained breathing apparatus.

Fire residues must be disposed of in accordance within the local regulations.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation.
Use personal protective equipment.
High risk of slipping due to leakage/spillage of product.

6.2 Environmental precautions

Do not discharge into the drains/surface waters/groundwater.
In case the product spills into drains/surface waters/groundwater, immediately inform the authorities.

6.3 Methods and material for containment and cleaning up

Take up mechanically.
Take up residues with absorbent material (e.g. sand, sawdust, general purpose binder, diatomaceous earth).
Dispose of absorbed material in accordance within the regulations.

6.4 Reference to other sections

See SECTION 8+13

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Use only in well-ventilated areas.

Take off contaminated clothing and wash before reuse.
Do not eat, drink, smoke or take drugs at work.
Wash hands before breaks and after work.
Use barrier skin cream.

7.2 Conditions for safe storage, including any incompatibilities

Keep only in original container.
Prevent penetration into the ground.

Do not store together with food and animal food/diet.

Keep container in a well-ventilated place.
Keep container tightly closed.
Keep in a cool place. Store in a dry place.
Protect from atmospheric moisture and water.
Store in a dark place.
Recommended storage temperature: 5 - 25 °C

7.3 Specific end use(s)

See product use, SECTION 1.2

SECTION 8: Exposure controls/personal protection

Ingredients with occupational exposure limits to be monitored (US)

8.1 Control parameters

not applicable

8.2 Exposure controls

Additional advice on system design	Ensure adequate ventilation on workstation.
Eye protection	safety glasses
Hand protection	The details concerned are recommendations. Please contact the glove supplier for further information. Nitrile rubber, >480 min (EN 374).
Skin protection	Protective clothing. Avoid contact with eyes and skin. Do not inhale gases/vapours/aerosols. Personal protective equipment should be selected specifically for the working place, depending on concentration and quantity handled. The resistance of this equipment to chemicals should be ascertained with the respective supplier.
Respiratory protection	If ventilation is insufficient, wear respiratory protection. Short term: filter apparatus, combination filter A-P2.
Thermal hazards	not applicable
Delimitation and monitoring of the environmental exposition	Protect the environment by applying appropriate control measures to prevent or limit emissions.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Form	pasty
Color	light beige
Odor	characteristic
Odour threshold	not determined
pH-value	not applicable
pH-value [1%]	not applicable
Boiling point [°C]	not determined
Flash point [°C]	not applicable
Flammability [°C]	not determined
Lower explosion limit	not determined
Upper explosion limit	not determined
Oxidizing properties	not determined
Vapour pressure/gas pressure [kPa]	not determined
Density [g/ml]	1,52 - 1,68 (23°C / 73,4°F)
Bulk density [kg/m³]	not applicable
Solubility in water	insoluble
Partition coefficient [n-octanol/water]	not determined
Viscosity	not determined
Relative vapour density determined in air	not determined
Evaporation speed	not determined
Melting point [°C]	not determined
Autoignition temperature [°C]	not determined
Decomposition temperature [°C]	not determined

9.2 Other information

No information available.

SECTION 10: Stability and reactivity

10.1 Reactivity

No dangerous reactions known if used as directed.

10.2 Chemical stability

The product is stable under standard conditions.

10.3 Possibility of hazardous reactions

Reactions with oxidizing agents.

10.4 Conditions to avoid

See SECTION 7.2.

10.5 Incompatible materials

Strong oxidizing agent.

10.6 Hazardous decomposition products

No hazardous decomposition products known.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product
ATE-mix, oral, Rat: 2000 - 5000 mg/kg.

Range [%]	Substance
10 - <20	Ethylene dimethacrylate, CAS: 97-90-5
	LD50, oral, Rat: 3300 mg/kg (RTECS).
0,1 - <1	1,1'-(p-Tolylimino)dipropan-2-ol, CAS: 38668-48-3
	LD50, oral, Rat: 27,5 mg/kg.
1 - <10	Methacrylic acid, monoester with Propan-1,2-diole, CAS: 27813-02-1
	LD50, dermal, Rabbit: > 5000 mg/kg.
	LD50, oral, Rat: > 2000 mg/kg OECD 401.

Serious eye damage/irritation	Toxicological data of complete product are not available. No classification. Calculation method
Skin corrosion/irritation	Does not contain any relevant substances fulfilling the classification criteria.
Respiratory or skin sensitisation	Toxicological data of complete product are not available. May cause an allergic skin reaction. Calculation method
Specific target organ toxicity — single exposure	Toxicological data of complete product are not available. May cause respiratory irritation. Calculation method
Specific target organ toxicity — repeated exposure	Toxicological data of complete product are not available. Based on the information available, the classification criteria have not been fulfilled.
Mutagenicity	Does not contain any relevant substances fulfilling the classification criteria.
Reproduction toxicity	Does not contain any relevant substances fulfilling the classification criteria.
Carcinogenicity	Does not contain any relevant substances fulfilling the classification criteria.
Aspiration hazard	Does not contain any relevant substances fulfilling the classification criteria.
General remarks	

The toxicity data listed pertaining to the ingredients are intended for those working in the medicinal professions, experts for occupational health and safety and toxicologists. The toxicity data pertaining to the ingredients were supplied by the manufacturers of raw materials.

SECTION 12: Ecological information

12.1 Toxicity

Range [%]	Substance
10 - <20	Ethylene dimethacrylate, CAS: 97-90-5
	LC50, (96h), Danio rerio: 15,95 mg/l (OECD 203).
	EC50, (3h), Pseudomonas putida: 570 mg/l (OECD 209).
0,1 - <1	1,1'-(p-Tolylimino)dipropan-2-ol, CAS: 38668-48-3
	LC50, (96h), fish: 17 mg/l.
	EC50, (48h), Daphnia magna: 28,8 mg/l.
1 - <10	Methacrylic acid, monoester with Propan-1,2-diole, CAS: 27813-02-1
	LC50, (48h), Leuciscus idus: 493 mg/l (DIN 38412).
	EC50, (72h), Pseudokirchneriella subcapitata: 97,2 mg/l (OECD 201).
	EC50, (48h), Daphnia magna: 380 mg/l (OECD 202).

12.2 Persistence and degradability

Behaviour in environment compartments	not determined
Behaviour in sewage plant	not determined
Biological degradability	not determined

12.3 Bioaccumulative potential

No information available.

12.4 Mobility in soil

No information available.

12.5 Results of PBT and vPvB assessment

Based on all available information not to be classified as PBT or vPvB respectively.

12.6 Other adverse effects

Ecological data of complete product are not available.
The toxicity data pertaining to the ingredients were supplied by the manufacturers of raw materials.
Do not discharge product unmonitored into the environment.

SECTION 13: Disposal considerations

Product	Coordinate disposal with the disposal contractor/authorities if necessary.
Contaminated packaging	Uncontaminated packaging may be taken for recycling. Packaging that cannot be cleaned should be disposed of as for product.
RCRA Hazard Class (40CFR 261)	Waste must be disposed of in accordance with federal, state and local environmental control regulations. Consult your local or regional authorities.

SECTION 14: Transport

14.1 UN number

See SECTION 14.2 in accordance with UN shipping name

14.2 UN proper shipping name

Transport by land according to ADR/RID	NO DANGEROUS GOODS
Inland navigation (ADN)	NO DANGEROUS GOODS
Marine transport in accordance with IMDG	NOT CLASSIFIED AS "DANGEROUS GOODS"
Air transport in accordance with IATA	NOT CLASSIFIED AS "DANGEROUS GOODS"

14.3 Transport hazard class(es)

See SECTION 14.2 in accordance with UN shipping name

14.4 Packing group

See SECTION 14.2 in accordance with UN shipping name

14.5 Environmental hazards

See SECTION 14.2 in accordance with UN shipping name

14.6 Special precautions for user

Relevant information under SECTION 6 to 8.

14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code

not applicable

SECTION 15: Regulatory information

US Regulations

National regulations	29 CFR 1910.1200, ANSI Z400.1-2010, OSHA-PEL, ACGIH-TLV, NTP, IARC, SARA Title III, NFPA, TSCA, California - Prop. 65
- SARA, 302	This product does not contain any ingredients regulated under this list.
- SARA, 311	This product does not contain any ingredients regulated under this list.
- SARA, 313	This product does not contain any ingredients regulated under this list.
- CA Proposition 65	No components require labeling under California Proposition 65.
- TSCA	All chemical substances in this material are included on or exempted from listing on the TSCA Inventory.
- FDA	not applicable
American Conference of Governmental Industrial Hygienists - ACGIH	ACGIH: yes - contains crystalline silica
International Agency for Research on Cancer IARC	IARC: yes - contains crystalline silica.
National Toxicology Program - NTP	This product is named NTP - National Toxicology Program (contains crystalline silica).
HAP-VOC	0 %
Transport-regulations	DOT-Classification, ADR (2013); IMDG-Code (2013, 36. Amdt.); IATA-DGR (2013).
Other Right to Know Laws	

SECTION 16: Other information

16.1 Hazard statements (SECTION 3)

H412 Harmful to aquatic life with long lasting effects.
H300 Fatal if swallowed.
H372 Causes damage to organs through prolonged or repeated exposure.
H319 Causes serious eye irritation.
H317 May cause an allergic skin reaction.
H335 May cause respiratory irritation.

16.2 Abbreviations and acronyms:

ACGIH = American Conference of Governmental Industrial Hygienists;
ADR = Accord européen relatif au transport international des marchandises Dangereuses par Route;
RID = Règlement concernant le transport international ferroviaire de marchandises dangereuses;
ADN = Accord européen relatif au transport international des marchandises dangereuses par voie de navigation intérieure;
CAS = Chemical Abstracts Service;
CERCLA = Comprehensive Environmental Response, Compensation and Liability Act;
CFR = Code of Federal Regulations;
CPR = Controlled Products Regulations;
DMEL = Derived Minimum Effect Level;
DNEL = Derived No Effect Level;
DOT = Department of Transportation;
EC50 = Median effective concentration;
EPA = Environmental Protection Agency;
GHS = Globally Harmonized System of Classification and Labelling of Chemicals;
IATA = International Air Transport Association;
IBC-Code = International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk;
IC50 = Inhibition concentration, 50%;
IMDG = International Maritime Code for Dangerous Goods;
IARC = International Agency of Research on Cancer;
IATA = International Air Transport Association;
TSCA = Toxic Substance Control Act;
HMIS = Hazardous Materials Identification System;
NFPA = National Fire Protection Association;
NIOSH = National Institute for Occupational Safety and Health;
OSHA = Occupational Safety and Health Administration;
LC50 = Lethal concentration, 50%;
LD50 = Median lethal dose, 50%;
MARPOL = International Convention for the Prevention of Marine Pollution from Ships;
PBT = Persistent, Bioaccumulative and Toxic substance;
PNEC = Predicted No-Effect Concentration;
REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals;
SARA = Superfund Amendments and Reauthorization Act;
TLV®/TWA = Threshold limit value – time-weighted average;
TLV®STEL = Threshold limit value – short-time exposure limit;
VOC = Volatile Organic Compounds;
vPvB = very Persistent and very Bioaccumulative;

16.3 Other information

Classification procedure

Skin Sens. 1: H317 May cause an allergic skin reaction. (Calculation method)
STOT SE 3: H335 May cause respiratory irritation. (Calculation method)

Modified position

SECTION 2 been added: P271 Use only outdoors or in a well-ventilated area.

SECTION 2 deleted: P261 Avoid breathing vapours.

SECTION 2 been added: The product is required to be labelled in accordance with GHS/CLP-Directives.

SECTION 2 deleted: The product is classified as hazardous in accordance to OSHA Standard 29 CFR 1910.1200 (HCS 2012)

SECTION 2 been added: P405 Store locked up.

SECTION 8 been added: safety glasses

SECTION 8 deleted: Tightly fitting goggles.

SECTION 11 deleted: There is no evidence of any reproductive toxicity effects.

SECTION 11 been added: No classification.

SECTION 11 been added: Calculation method

SECTION 11 been added: Does not contain any relevant substances fulfilling the classification criteria.

SECTION 11 deleted: Sensitizing.

SECTION 11 been added: May cause an allergic skin reaction.

SECTION 11 been added: May cause respiratory irritation.

SECTION 11 deleted: There is no evidence of any mutagenic effects.

SECTION 11 deleted: There is no evidence of any carcinogenic effects.

SECTION 11 deleted: The product was classified on the basis of the calculation procedure of the preparation directive.

SECTION 11 been added: The toxicity data listed pertaining to the ingredients are intended for those working in the medicinal professions, experts for occupational health and safety and toxicologists. The toxicity data pertaining to the ingredients were supplied by the manufacturers of raw materials.

SECTION 11 been added: Based on the information available, the classification criteria have not been fulfilled.

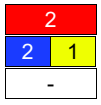
SECTION 12 deleted: No classification on the basis of the calculation procedure of the preparation directive.

16.4 Ratings

HMIS Ratings

HEALTH 2	2 - Moderate Hazard
FLAMMABILITY 2	2 - Moderate Hazard
REACTIVITY 1	1 - Slight Hazard
PERSONAL PROTECTION X	X - Personal protection rating to be supplied by user depending on use conditions

NFPA Ratings



TOP, FLAMMABILITY: 2 - Moderate Hazard
LEFT, HEALTH: 2 - Moderate Hazard RIGHT, REACTIVITY: 1 - Slight Hazard
BOTTOM, SPECIAL NOTICE: -

SAFETY DATA SHEET

1. Identification

Product identifier **ALUMINIUM SHEET COIL AND FOIL - BARE AND COATED**

Other means of identification

SDS number 1352

Version # 04

Revision date May 31, 2015.

Other means of identification

Synonyms Alloys 0333, 1050, 1100, 1350, 3003, 3004, 3005, 3105, 5005, 5042,5050,5052, 5082, 5083, 5086, 5182, 5454, 5754, 6061, 8011

Recommended use Various fabricated aluminum parts and products

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Alcoa Inc.
201 Isabella Street
Pittsburgh, PA 15212-5858 USA
Health and Safety Tel: 1-412-553-4649
Health and Safety Fax: 1-412-553-4822
Health and Safety Email: accmsds@alcoa.com

Emergency Information CHEMTREC: +1-703-527-3887 +1-800-424-9300 (24 Hour Emergency Telephone, multiple languages spoken); ALCOA: +1-412-553-4001 (24 Hour Emergency Telephone, only English spoken)

Website For a current Safety Data Sheet, refer to Alcoa websites: www.alcoa.com or internally at my.alcoa.com EHS Community

2. Hazard(s) identification

Classification

When used as intended, this product is an article and should not pose any health hazard.

Potential health effects

The following statements summarize the health effects generally expected in cases of overexposures. User specific situations should be assessed by a qualified individual. Additional health information can be found in Section 11.
The health effects listed below are not likely to occur unless processing of this product generates dusts or fumes.

Physical hazards Not classified.

Health hazards Not classified.

Environmental hazards Not classified.

Authority defined hazards Combustible dust

Label elements

Hazard symbol None.

Signal word Warning

Hazard statement The mixture does not meet the criteria for classification.
May form combustible dust concentrations in air.

Precautionary statement

Prevention Not applicable.

Response Not applicable.

Storage Keep dry.

Disposal Reuse or recycle material whenever possible.

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information None.

Specific hazards

Non-combustible as supplied. Small chips, fine turnings, and dust from processing may be readily ignitable.

Explosion/fire hazards may be present when:
• Dust or fines are dispersed in air.
• Chips, dust or fines are in contact with water.
• Dust and fines are in contact with certain metal oxides (e.g., rust, copper oxide).
• Molten metal in contact with water/moisture or certain metal oxides (e.g., rust, copper oxide).

Dust and fumes from processing: Can cause irritation of the eyes, skin and upper respiratory tract.

3. Composition/information on ingredients

Composition comments

Complete composition is provided below and may include some components classified as non-hazardous.

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Aluminum (Aluminum Alloys)		7429-90-5	>82
Magnesium (Aluminum Alloys)		7439-95-4	<5.0
Manganese (Aluminum Alloys)		7439-96-5	<1.5
Iron (Aluminum Alloys)		7439-89-6	<1.0
Silicon (Aluminum Alloys)		7440-21-3	<1.0
Chromium (Aluminum Alloys)		7440-47-3	<0.35
Coatings† (Coatings)		Various	0 - 30

Additional Information

† Coatings include: vinyl, epoxy, polyester, siliconized polyester, acrylic, fluorocarbons, polyurethane, resins, petroleum, chromium conversion and titanium conversion.
Additional compounds which may be formed during processing are listed in Section 8.

4. First-aid measures

Eye contact

Dust and fumes from processing: Rinse eyes with plenty of water or saline for at least 15 minutes. Consult a physician.

Skin contact

If molten material gets on skin, cool rapidly with cold water. Get medical treatment for thermal burn .

Dust and fumes from processing: Wash with soap and water for at least 15 minutes. Get medical attention if irritation develops or persists.

Inhalation

Dust and fumes from processing: Remove to fresh air. Check for clear airway, breathing, and presence of pulse. If breathing is difficult, provide oxygen. Loosen any tight clothing on neck or chest. Provide cardiopulmonary resuscitation for persons without pulse or respirations. Consult a physician.

Ingestion

Not relevant, due to the form of the product.

Most important symptoms/effects, acute and delayed

Dust and fumes from processing: Can cause irritation of the eyes, skin and upper respiratory tract. See Section 11 of the SDS for additional information on health hazards.

Medical conditions aggravated by exposure

Dust and fume from processing: Asthma, chronic lung disease, and skin rashes.

Indication of immediate medical attention and special treatment needed

In case of shortness of breath, give oxygen. Symptoms may be delayed.

General information

If exposed or concerned: get medical attention/advice.

5. Fire-fighting measures

Suitable extinguishing media

Use Class D extinguishing agents on fines, dust or molten metal.
Use coarse water spray on chips and turnings.

Unsuitable extinguishing media

DO NOT USE water in fighting fires around molten metal.
DO NOT USE halogenated extinguishing agents on small chips/fines.
These fire extinguishing agents will react with the burning material.

Specific hazards arising from the chemical	May be a potential hazard under the following conditions: • Dust clouds may be explosive. Even a minor dust cloud can explode violently. Dust accumulation on the floor, ledges and beams can present a risk of ignition, flame propagation and secondary explosions. • Chips, fines and dust in contact with water can generate flammable/explosive hydrogen gas. These gases could present an explosion hazard in confined or poorly ventilated spaces. • Dust and fines in contact with certain metal oxides (e.g., rust, copper oxide). A thermite reaction, with considerable heat generation, can be initiated by a weak ignition source. • Molten metal in contact with water/moisture or certain metal oxides (e.g., rust, copper oxide). Moisture entrapped by molten metal can be explosive. Contact of molten aluminum with certain metal oxides can initiate a thermite reaction. Finely divided metals (e.g., powders or wire) may have enough surface oxide to produce thermite reactions/explosions.
Special protective equipment and precautions for firefighters	Firefighters should wear NIOSH approved, positive pressure, self-contained breathing apparatus and full protective clothing when appropriate.
Fire fighting equipment/instructions	Apply extinguishing media carefully to avoid creating airborne dust. Use gentle surface application of Class D extinguishing agent or dry inert granular material (e.g., sand) to cover and ring the burning material. If impossible to extinguish, protect surroundings and allow fire to burn itself out.
General fire hazards	Non-combustible as supplied. Small chips, fine turnings, and dust from processing may be readily ignitable.
Explosion data	
Sensitivity to mechanical impact	Not sensitive.
Sensitivity to static discharge	Take precautionary measures against static discharges when there is a risk of dust explosion.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Avoid contact with sharp edges or heated metal. Avoid inhalation of fumes from molten product. Molten, heated and cold aluminum look alike; do not touch unless you know it is cold. Avoid contact even after material solidifies. Use personal protection recommended in Section 8 of the SDS.
Personal precautions, protective equipment and emergency procedures	
For emergency responders	Avoid contact with sharp edges or heated metal. Avoid inhalation of fumes from molten product. Molten, heated and cold aluminum look alike; do not touch unless you know it is cold. Avoid contact even after material solidifies. Use personal protection recommended in Section 8 of the SDS.
Evacuation procedures	Molten metal: Persons not wearing appropriate protective equipment should be excluded from area of spill until clean-up has been completed.
Methods and materials for containment and cleaning up	Collect scrap for recycling. If molten: Use dry sand to contain the flow of material. All tooling (e.g., shovels or hand tools) and containers which come in contact with molten metal must be preheated or specially coated, rust free and approved for such use. Allow the spill to cool before remelting as scrap.

7. Handling and storage

Handling	Keep material dry. Avoid generating dust. Avoid contact with sharp edges or heated metal. Hot and cold aluminum are not visually different. Hot aluminum does not necessarily glow red. Use personal protection recommended in Section 8 of the SDS.
Storage	Store in a dry place. Protect from water run-on including precipitation.

Requirements for Processes Which Generate Dusts or Fines

If processing of this product generates dust or if extremely fine particulate is generated, obtain and follow the safety procedures and equipment guides contained in Aluminum Association Bulletin F-1 and National Fire Protection Association (NFPA) standards listed in Section 16.

Use non-sparking handling equipment, tools and natural bristle brush. Cover and reseal partially empty containers. Provide grounding and bonding where necessary to prevent accumulation of static charges during metal dust handling and transfer operations (See Section 15).

Local ventilation and vacuum systems must be designed to handle explosive dusts. Dry vacuums and electrostatic precipitators must not be used, unless specifically approved for use with flammable/explosive dusts. Dust collection systems must be dedicated to aluminum dust only and should be clearly labeled as such. Do not co-mingle fines of aluminum with fines of iron, iron oxide (rust) or other metal oxides.

Do not allow chips, fines or dust to contact water, particularly in enclosed areas.

Avoid all ignition sources. Good housekeeping practices must be maintained. Do not use compressed air to remove settled material from floors, beams or equipment.

Requirements for Remelting of Scrap Material or Ingot

Molten metal and water can be an explosive combination. The risk is greatest when there is sufficient molten metal to entrap or seal off the water. Water and other forms of contamination on or contained in scrap or remelt ingot are known to have caused explosions in melting operations. While the products may have minimal surface roughness and internal voids, there remains the possibility of moisture contamination or entrapment. If confined, even a few drops of water can lead to violent explosions.

All tooling, containers, molds and ladles which come in contact with molten metal must be preheated or specially coated, rust free and approved for such use. Any surfaces that may contact molten metal (e.g., concrete) should be specially coated.

Drops of molten metal in water (e.g. from plasma arc cutting), while not normally an explosion hazard, can generate enough flammable hydrogen gas to present an explosion hazard. Vigorous circulation of the water and removal of the particles minimize the hazards.

During melting operations, the following minimum guidelines should be observed:
• Inspect all materials prior to furnace charging and completely remove surface contamination such as water, ice, snow, deposits of grease and oil or other surface contamination resulting from weather exposure, shipment, or storage.
• Store materials in dry, heated areas with any cracks or cavities pointed downwards.
• Preheat and dry large items adequately before charging into a furnace containing molten metal. This is typically done by use of a drying oven or homogenizing furnace. The drying cycle should bring the metal temperature of the coldest item of the batch to 400°F (200°C) and then hold at that temperature for 6 hours.

Thermite explosions have been reported when aluminum alloys were melted in furnaces used for alloying with lead, bismuth or other metals with low melting temperatures. These metals, when added as high purity ingots, can seep through cracks in furnace liners and become oxidized. During subsequent melts in the furnace, molten aluminum can contact these metal oxides resulting in a thermite explosion.

8. Exposure controls/personal protection

Occupational exposure limits

U.S. - OSHA

Components	Type	Value	Form
Aluminum (CAS 7429-90-5)	TWA	5 mg/m3	Respirable fraction
		15 mg/m3	Total dust
Chromium (CAS 7440-47-3)	TWA	1 mg/m3	
Manganese (CAS 7439-96-5)	Ceiling	5 mg/m3	Fume
Silicon (CAS 7440-21-3)	TWA	5 mg/m3	Respirable fraction.
		15 mg/m3	Total dust

Additional components	Type	Value	Form
Aluminum oxide (non-fibrous) (CAS 1344-28-1)	TWA	5 mg/m3	Respirable fraction.
		15 mg/m3	Total dust.
Chromium (II) compounds	TWA	0.5 mg/m3	(as Cr)

U.S. - OSHA

Additional components	Type	Value	Form
Chromium (III) compounds	TWA	0.5 mg/m3	(as Cr)
Chromium (VI) compounds, certain water insoluble forms	TWA	0.0025 mg/m3	Action Level as Cr(VI))
Chromium (VI) compounds (CAS 18540-29-9)	TWA	0.0025 mg/m3	Action Level as Cr(VI)
Hydrogen fluoride (CAS 7664-39-3)	TWA	3 ppm	(as F)
Iron oxide (CAS 1309-37-1)	TWA	10 mg/m3	Fume.
Manganese compounds, inorganic	Ceiling	5 mg/m3	(as Mn) Fume
Ozone (CAS 10028-15-6)	TWA	0.2 mg/m3	
		0.1 ppm	

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Additional components	Type	Value	Form
Chromium (VI) compounds, certain water insoluble forms	TWA	0.005 mg/m3	as Cr(VI)
Chromium (VI) compounds, water soluble forms	TWA	0.005 mg/m3	
Chromium (VI) compounds (CAS 18540-29-9)	TWA	0.005 mg/m3	as Cr(VI)

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Additional components	Type	Value	Form
Hydrogen chloride (CAS 7647-01-0)	Ceiling	7 mg/m3	
		5 ppm	
Magnesium oxide (CAS 1309-48-4)	PEL	15 mg/m3	Total particulate.

ACGIH

Components	Type	Value	Form
Manganese (CAS 7439-96-5)	TWA (inhalable fraction)	0.2 mg/m3	(inhalable fraction)
	TWA (respirable fraction)	0.02 mg/m3	(respirable fraction)

Additional components	Type	Value	Form
Aluminum oxide (non-fibrous) (CAS 1344-28-1)	TWA	1 mg/m3	Respirable fraction, as Al
Chromium (VI) compounds, water soluble forms	TWA	0.05 mg/m3	(as Cr)
Chromium (VI) compounds (CAS 18540-29-9)	TWA	0.05 mg/m3	Soluble compounds as Cr
Ozone (CAS 10028-15-6)	TWA	0.2 ppm	(Heavy, moderate or light workloads (≤2 hours))

US ACGIH Threshold Limit Values: Ceiling Limit Value: mg/m3 & ppm

Additional components	Type	Value
Hydrogen chloride (CAS 7647-01-0)	Ceiling	2 ppm

US ACGIH Threshold Limit Values: Time Weighted Average (TWA): mg/m3, non-standard units

Components	Type	Value	Form
Aluminum (CAS 7429-90-5)	TWA	1 mg/m3	Respirable fraction.
Chromium (CAS 7440-47-3)	TWA	0.5 mg/m3	

US ACGIH Threshold Limit Values: Time Weighted Average (TWA): mg/m3, non-standard units

Additional components	Type	Value	Form
Chromium (III) compounds	TWA	0.5 mg/m3	
Chromium (VI) compounds, certain water insoluble forms	TWA	0.01 mg/m3	(as Cr)
Chromium (VI) compounds (CAS 18540-29-9)	TWA	0.01 mg/m3	Insoluble compounds as Cr
Iron oxide (CAS 1309-37-1)	TWA	5 mg/m3	Respirable fraction.
Magnesium oxide (CAS 1309-48-4)	TWA	10 mg/m3	Inhalable fraction.
Manganese compounds, inorganic	TWA	0.1 mg/m3	Inhalable fraction.
		0.02 mg/m3	Respirable fraction.

Alcoa

Components	Type	Value	Form
Aluminum (CAS 7429-90-5)	TWA	3 mg/m3	Respirable fraction
		10 mg/m3	Total dust
Manganese (CAS 7439-96-5)	TWA	0.05 mg/m3	Total dust.
		0.02 mg/m3	Respirable fraction.

Additional components	Type	Value	Form
Aluminum oxide (non-fibrous) (CAS 1344-28-1)	TWA	3 mg/m3	Respirable fraction.
		10 mg/m3	Total dust.
Chromium (VI) compounds (CAS 18540-29-9)	TWA	0.25 µg/m3	
Hydrogen fluoride (CAS 7664-39-3)	STEL	1.64 mg/m3	Peak (as F) (Skin)
		2 ppm	Peak (as F) (Skin)
	TWA	0.5 mg/m3	(as F) (Skin)
Manganese compounds, inorganic	TWA	0.05 mg/m3	Total dust, as Mn.
		0.02 mg/m3	Respirable fraction, as Mn.

Exposure guidelines

US ACGIH Threshold Limit Values: Skin designation

Hydrogen fluoride (CAS 7664-39-3) Can be absorbed through the skin.

US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants

HYDROGEN FLUORIDE, AS F (CAS 7664-39-3) Can be absorbed through the skin.

General Personnel who handle and work with molten metal should utilize primary protective clothing like polycarbonate face shields, fire resistant tapper's jackets, neck shades (snoods), leggings, spats and similar equipment to prevent burn injuries. In addition to primary protection, secondary or day-to-day work clothing that is fire resistant and sheds metal splash is recommended for use with molten metal. Synthetic materials should never be worn even as secondary clothing (undergarments).

Appropriate engineering controls Dust and fumes from processing: Use with adequate explosion-proof ventilation designed to handle particulates to meet the limits listed in Section 8, Exposure Guidelines.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields. Wear a face shield when working with molten material.

Skin protection

Hand protection Wear impervious gloves to avoid direct skin contact. When handling hot material, use heat resistant gloves. The need for personal protective equipment (gloves) should be based upon a hazard assessment and recommendations from health / safety professionals. The most suitable glove must be chosen in consultation with the gloves supplier, who can inform about the breakthrough time of the glove material.

Other The need for personal protective equipment should be based upon a hazard assessment and recommendations from health / safety professionals.

Respiratory protection	Dust and fumes from processing: Use NIOSH-approved respiratory protection as specified by an Industrial Hygienist or other qualified professional if concentrations exceed the limits listed in Section 8. Suggested respiratory protection: N95, Acid gas cartridges for Hydrogen chloride, Acid gas cartridge for Hydrogen fluoride gas.
Thermal hazards	Contact with molten material can cause thermal burns. Hot aluminum does not necessarily glow red. When material is heated, wear gloves to protect against thermal burns. Wear appropriate thermal protective clothing, when necessary. Flame retardant protective clothing is recommended. Molten metal: Full Face Shield.
General hygiene considerations	Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and immediately after handling the product. When using, do not eat, drink or smoke.
Control parameters	Follow standard monitoring procedures.

9. Physical and chemical properties

Form	Bare or coated coil/sheet.
Color	Various colors.
Odor	Odorless
Odor threshold	Not Applicable
pH	Not applicable
Density	2.63 - 3.12 g/cm3
Melting point/freezing point	900 - 1200 °F (482.22 - 648.89 °C)
Initial boiling point and boiling range	Not Applicable
Flash point	Not applicable
Evaporation rate	Not applicable.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit - upper (%)	Not applicable
Flammability limit - lower (%)	Not applicable
Explosive properties	Dust clouds may be explosive under certain conditions.
Dust explosion properties	
St class	Very strong explosion.
Vapor pressure	Not applicable
Vapor density	Not applicable
Relative density	Not determined.
Solubility(ies)	Insoluble
Partition coefficient (n-octanol/water)	Not applicable
Auto-ignition temperature	Not Applicable
Decomposition temperature	Not applicable.
Viscosity	Not applicable.

10. Stability and reactivity

Reactivity	Thermite explosions have been reported when aluminum alloys were melted in furnaces used for alloying with lead, bismuth or other metals with low melting temperatures. These metals, when added as high purity ingots, can seep through cracks in furnace liners and become oxidized. During subsequent melts in the furnace, molten aluminum can contact these metal oxides resulting in a thermite explosion. Thermite reactions can occur with oxides of lead, copper, iron, bismuth and certain other metals.
Chemical stability	Stable under normal conditions of use, storage, and transportation as shipped.
Possibility of hazardous reactions	Hazardous polymerization does not occur.

Conditions to avoid

Explosions can occur with coils of foil that have been submerged or partially submerged in water for an extended period of time. Water can penetrate between the layers of foil, react with the aluminum surface and generate heat and hydrogen gas. When the coils are removed from the cooling effects of the water, rapid temperature increases can occur causing steam explosions which result in the rupture of the coils and discharge of debris.

Coils of foil may be a potential hazard under the following conditions:
- Coil has been annealed (annealing removes residual oil that could prevent penetration of water
) - Foil is very thin gauge (5-9 µm thickness which increases surface area)
- Coil has been immersed for an extended period of time (several hours or more)
- Wetted coil has recently been removed from the cooling effects of the water

In such situations, the coils should be isolated (30 meters from any personnel) for at least 72 hours as soon as possible after removal from the water. Coils making crackling sounds or emitting steam should not be approached or transported in commerce. Wetted coils should not be charged into a furnace for remelting until completely dry.

Chips, fines, dust and molten metal are considerably more reactive with the following:
• Water: Slowly generates flammable/explosive hydrogen gas and heat. Generation rate is greatly increased with smaller particles (e.g., fines and dusts). Molten metal can react violently/explosively with water or moisture, particularly when the water is entrapped.
• Heat: Oxidizes at a rate dependent upon temperature and particle size.

Grinding, sanding, buffing and polishing operations may generate potentially explosive aluminum dust, fines or particulate that must not be co-mingled with dust, fines or particulate of steel, iron, iron oxide (rust) or other metal oxides. Vacuum and dust collection systems utilized for processing aluminum must be placarded as follows:

WARNING – Aluminum Metal Only – Fire or Explosion Can Result with Other Metals.

Incompatible materials

Chips, fines, dust and molten metal are considerably more reactive with the following:
• Strong oxidizers: Violent reaction with considerable heat generation. Can react explosively with nitrates (e.g., ammonium nitrate and fertilizers containing nitrate) when heated or molten.
• Acids and alkalis: Reacts to generate flammable/explosive hydrogen gas. Generation rate is greatly increased with smaller particles (e.g., fines and dusts).
• Halogenated compounds: Many halogenated hydrocarbons, including halogenated fire extinguishing agents, can react violently with finely divided or molten aluminum.
• Iron oxide (rust) and other metal oxides (e.g., copper and lead oxides): A violent thermite reaction generating considerable heat can occur. Reaction with aluminum fines and dusts requires only very weak ignition sources for initiation. Molten aluminum can react violently with iron oxide without external ignition source.
• Iron powder and water: Explosive reaction forming hydrogen gas when heated above 1470°F (800°C).

Hazardous decomposition products

Combustion of the coatings can generate Carbon monoxide, Carbon dioxide, Hydrogen chloride, Chlorinated hydrocarbons, Hydrogen fluoride and partially oxidized hydrocarbons.

11. Toxicological information

Health effects associated with ingredients

Aluminum dust/fines and fumes: Low health risk by inhalation. Generally considered to be biologically inert (milling, cutting, grinding).

Silicon (inert dusts): Chronic overexposures: Can cause chronic bronchitis and narrowing of airways.

Chromium dust and fumes: Can cause irritation of eye, skin and respiratory tract. Metallic chromium and trivalent chromium: Not classifiable as to their carcinogenicity to humans by IARC.

Health effects associated with compounds formed during processing

(The following could be expected if welded, remelted or otherwise processed at elevated temperatures)

Alumina (aluminum oxide): Low health risk by inhalation. Generally considered to be biologically inert.

Magnesium oxide fumes: Can cause irritation of the eyes and respiratory tract. Acute overexposures: Can cause metal fume fever (nausea, fever, chills, shortness of breath and malaise).

Manganese oxide fumes: Can cause irritation of the eyes, skin, and respiratory tract. Acute overexposures: Can cause metal fume fever (nausea, fever, chills, shortness of breath and malaise).

Manganese compounds: Chronic overexposures: Can cause inflammation of the lung tissues, scarring of the lungs (pulmonary fibrosis), central nervous system damage, Secondary Parkinson's Disease and reproductive harm in males.

Iron oxide: Chronic overexposures: Can cause benign lung disease (siderosis). Ingestion: Can cause irritation of gastrointestinal tract, bleeding, changes in the pH of the body fluids (metabolic acidosis) and liver damage.

Silica, amorphous: Acute overexposures: Can cause dryness of eyes, nose and upper respiratory tract.

Hexavalent chromium compounds (Chromium VI): Can cause irritation of eye, skin and respiratory tract. Skin contact: Can cause irritant dermatitis, allergic reactions and skin ulcers. Chronic overexposures: Can cause perforation of the nasal septum, respiratory sensitization, asthma, the accumulation of fluid in the lungs (pulmonary edema), lung damage, kidney damage, lung cancer, nasal cancer and cancer of the gastrointestinal tract. IARC/NTP: Listed as "known to be a human carcinogen" by the NTP. Listed as carcinogenic to humans by IARC (Group 1).

Welding, plasma arc cutting, and arc spray metalizing can generate ozone.
Ozone: Can cause irritation of eyes, nose and upper respiratory tract. Acute overexposures: Can cause shortness of breath, tightness of chest, headache, cough, nausea and narrowing of airways. Effects are reversible on cessation of exposure. Acute overexposures (high concentrations): Can cause respiratory distress, respiratory tract damage, bleeding and the accumulation of fluid in the lungs (pulmonary edema). Effects can be delayed up to 1-2 hours. Additional information: Studies (inhalation) with experimental animals have found genetic damage, reproductive harm, blood cell damage, lung damage and death.

Welding fumes: IARC/NTP: Listed as possibly carcinogenic to humans by IARC (Group 2B). Additional information: In one study, occupational asthma was associated with exposures to fumes from aluminum welding.

Combustion of the coatings can generate Hydrogen chloride or Hydrogen fluoride. Hydrogen chloride gas: Can cause severe irritation and corrosive burns of eyes, skin and upper respiratory tract. Acute overexposures: Can cause the accumulation of fluid in the lungs (pulmonary edema).

Hydrogen fluoride: Can cause severe irritation of the eyes, mucous membranes, skin and respiratory tract. Acute overexposures: Can cause cough, shock, the accumulation of fluid in the lungs (pulmonary edema) and death. Effects can be delayed up to 24 hours.

Information on likely routes of exposure

Eye contact	Dust and fumes from processing: Can cause irritation.
Skin contact	Dust and fumes from processing: Can cause irritation.
Inhalation	Dust and fumes from processing: Can cause irritation of the upper respiratory tract. Additional health effects from mechanical processing (e.g., cutting, grinding): None known. Additional health effects from elevated temperature processing (e.g., welding, melting): Acute overexposure: Can cause metal fume fever (nausea, fever, chills, shortness of breath malaise) and the accumulation of fluid in the lungs (pulmonary edema). Chronic overexposures: Can cause asthma, benign lung disease (siderosis) scarring of the lungs (pulmonary fibrosis), respiratory sensitization, central nervous system damage, secondary Parkinson's disease, reproductive harm and lung cancer. Combustion of the coatings can generate Hydrogen chloride and Hydrogen fluoride. Acute overexposures: Can cause severe irritation of the respiratory tract and the accumulation of fluid in the lungs (pulmonary edema). Effects can be delayed up to 24 hours.
Ingestion	Not relevant, due to the form of the product.
Symptoms related to the physical, chemical and toxicological characteristics	Dust and fumes from processing: Can cause irritation of the eyes, skin and upper respiratory tract.

Information on toxicological effects

Components	Species	Test Results
Aluminum (CAS 7429-90-5)		
Acute		
Inhalation		
LC50	Rat	> 2.3 mg/l
		7.6 mg/l
Oral		
LD50	Rat	> 2000 mg/kg

Additional components	Species	Test Results
Aluminum oxide (non-fibrous) (CAS 1344-28-1)		
Acute		
Inhalation		
LC50	Rat	> 2.3 mg/l
		7.6 mg/l
Oral		
LD50	Rat	> 5000 mg/kg
Hydrogen chloride (CAS 7647-01-0)		
Acute		
Dermal		
LD50	Mouse	1449 mg/kg
Inhalation		
LC50	Mouse	1108 ppm, 1 Hours
	Rat	3124 ppm, 1 Hours
Oral		
LD50	Rabbit	900 mg/kg
Hydrogen fluoride (CAS 7664-39-3)		
Acute		
Inhalation		
LC50	Guinea pig	4327 ppm, 15 Minutes
		3.54 mg/l, 15 Minutes
	Monkey	1780 ppm, 1 Hours
	Mouse	500 ppm, 1 Hours
	Rat	4970 ppm, 5 Minutes
		2689 ppm, 15 Minutes
		2042 ppm, 30 Minutes
		1278 ppm, 1 Hours
Iron oxide (CAS 1309-37-1)		
Acute		
Oral		
LD50	Rat	> 10000 mg/kg
Silica, amorphous (CAS 69012-64-2)		
Acute		
Oral		
LD50	Mouse	> 15000 mg/kg
	Rat	> 22500 mg/kg

Acute toxicity	Not classified. Based on available data, the classification criteria are not met.
Skin corrosion/irritation	Not classified. Based on available data, the classification criteria are not met.
Serious eye damage/eye irritation	May cause temporary eye irritation. Dust in the eyes will cause irritation.

Respiratory or skin sensitization
Product as shipped: Not a skin sensitizer. Not classified. Based on available data, the classification criteria are not met.

Respiratory sensitization
Product as shipped: Not classified. Based on available data, the classification criteria are not met.

Additional health effects from elevated temperature processing (e.g., welding, plasma cutting, melting): Contains chromium. May produce an allergic reaction. May cause sensitization by inhalation.

Skin sensitization
Not classified. Based on available data, the classification criteria are not met.

Germ cell mutagenicity
Not classified. Based on available data, the classification criteria are not met. Contains no ingredient listed as a mutagen.

Neurological effects
Product as shipped: Not classified. Based on available data, the classification criteria are not met.

Pre-existing conditions aggravated by exposure
Dust and fume from processing: Asthma, chronic lung disease, and skin rashes.

Carcinogenicity
Product as shipped: Does not present any cancer hazards.

Health effects from elevated temperature processing (e.g., welding, melting): Can present a cancer hazard (Hexavalent chromium compounds, Welding fumes).

IARC Monographs. Overall Evaluation of Carcinogenicity

Chromium (CAS 7440-47-3)	3 Not classifiable as to carcinogenicity to humans.
Chromium (III) compounds (CAS CAS No. Not available)	3 Not classifiable as to carcinogenicity to humans.
Chromium (VI) compounds (CAS 18540-29-9)	1 Carcinogenic to humans.
Chromium (VI) compounds, certain water insoluble forms (CAS CAS No. Not available)	1 Carcinogenic to humans.
Chromium (VI) compounds, water soluble forms (CAS CAS No. Not available)	1 Carcinogenic to humans.
Hydrogen chloride (CAS 7647-01-0)	3 Not classifiable as to carcinogenicity to humans.
Hydrogen fluoride (CAS 7664-39-3)	3 Not classifiable as to carcinogenicity to humans.
Iron oxide (CAS 1309-37-1)	3 Not classifiable as to carcinogenicity to humans.
Silica, amorphous (CAS 69012-64-2)	3 Not classifiable as to carcinogenicity to humans.

US. National Toxicology Program (NTP) Report on Carcinogens

Chromium (VI) compounds (CAS 18540-29-9)	Known To Be Human Carcinogen.
Chromium (VI) compounds, certain water insoluble forms (CAS CAS No. Not available)	Known To Be Human Carcinogen.
Chromium (VI) compounds, water soluble forms (CAS CAS No. Not available)	Known To Be Human Carcinogen.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Chromium (VI) compounds (CAS 18540-29-9)	Cancer
Chromium (VI) compounds, certain water insoluble forms (CAS CAS No. Not available)	Cancer
Chromium (VI) compounds, water soluble forms (CAS CAS No. Not available)	Cancer

Reproductive toxicity
Product as shipped: Does not present any reproductive hazards.
Additional health effects from elevated temperature processing (e.g., welding, melting): Can present a reproductive hazard for males (Manganese compounds).

Routes of exposure
Dust and fume from processing: Inhalation. Skin contact. Eye contact.

Specific target organ toxicity - single exposure
Not classified. Based on available data, the classification criteria are not met.

Specific target organ toxicity - repeated exposure
Not classified. Based on available data, the classification criteria are not met.

Aspiration hazard
Not an aspiration hazard.

12. Ecological information

Ecotoxicity
Not expected to be harmful to aquatic organisms.

Components		Species	Test Results
Chromium (CAS 7440-47-3)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	0.01 - 0.7 mg/l, 48 hours
Fish	LC50	Carp (Cyprinus carpio)	14.3 mg/l, 96 hours

Components		Species	Test Results
Iron (CAS 7439-89-6)			
Aquatic			
Crustacea	LC50	Cockle (Cerastoderma edule)	100 - 330 mg/l, 48 hours
		Common shrimp, sand shrimp (Crangon crangon)	33 - 100 mg/l, 48 hours
Fish	LC50	Channel catfish (Ictalurus punctatus)	> 500 mg/l, 96 hours
Manganese (CAS 7439-96-5)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	40 mg/l, 48 hours

Additional components		Species	Test Results
Hydrogen chloride (CAS 7647-01-0)			
Aquatic			
Fish	LC50	Western mosquitofish (Gambusia affinis)	282 mg/l, 96 hours
Hydrogen fluoride (CAS 7664-39-3)			
Aquatic			
Fish	LC50	Brown trout (Salmo trutta)	125 mg/l, 48 hours
Ozone (CAS 10028-15-6)			
Aquatic			
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	0.0081 - 0.0106 mg/l, 96 hours

Persistence and degradability The product contains inorganic compounds which are not biodegradable.

Bioaccumulative potential No data available on bioaccumulation.

Mobility in soil No data available.

Mobility in general Not considered mobile.

Other adverse effects None known.

13. Disposal considerations

Disposal instructions Reuse or recycle material whenever possible. If reuse or recycling is not possible, disposal must be made according to local or governmental regulations.

Waste codes RCRA Status: Not federally regulated in the U.S. if disposed of "as is."
RCRA waste codes other than described here may apply depending on use of the product. Status must be determined at the point of waste generation. Refer to 40 CFR 261 or state equivalent in the U.S. D007: Waste Chromium

US RCRA Hazardous Waste U List: Reference

Hydrogen fluoride (CAS 7664-39-3) U134

Waste from residues / unused products If reuse or recycling is not possible, disposal must be made according to local or governmental regulations.

Contaminated packaging Dispose of in accordance with local regulations.

14. Transport information

General Shipping Information

Basic Shipping Information

ID number -

Proper shipping name Not regulated

Hazard class -

Packing group -

General Shipping Notes

• When "Not regulated", enter the proper freight classification, SDS Number and Product Name onto the shipping paperwork.

Disclaimer

This section provides basic classification information and, where relevant, information with respect to specific modal regulations, environmental hazards and special precautions. Otherwise, it is presumed that the information is not available/not relevant

15. Regulatory information

US federal regulations

In reference to Title VI of the Clean Air Act of 1990, this material does not contain nor was it manufactured using ozone-depleting chemicals.
All electrical equipment must be suitable for use in hazardous atmospheres involving aluminum powder in accordance with 29 CFR 1910.307. The National Electrical Code, NFPA 70, contains guidelines for determining the type and design of equipment and installation which will meet this requirement.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Chromium (VI) compounds, certain water insoluble forms (CAS CAS No. Not available)	0.1 % Annual Export Notification required.

CERCLA Hazardous Substance List (40 CFR 302.4)

Chromium (CAS 7440-47-3)	Listed.
Manganese (CAS 7439-96-5)	Listed.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Chromium (VI) compounds (CAS 18540-29-9)	Cancer
Chromium (VI) compounds, certain water insoluble forms (CAS CAS No. Not available)	Cancer
Chromium (VI) compounds, water soluble forms (CAS CAS No. Not available)	Cancer
Chromium (VI) compounds (CAS 18540-29-9)	Eye irritation
Chromium (VI) compounds, certain water insoluble forms (CAS CAS No. Not available)	Eye irritation
Chromium (VI) compounds, water soluble forms (CAS CAS No. Not available)	Eye irritation
Chromium (VI) compounds (CAS 18540-29-9)	Skin sensitization
Chromium (VI) compounds, certain water insoluble forms (CAS CAS No. Not available)	Skin sensitization
Chromium (VI) compounds, water soluble forms (CAS CAS No. Not available)	Skin sensitization

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Section 311/312 hazard categories	Immediate Hazard - Yes	If particulates/fumes generated during processing.
	Delayed Hazard - Yes	If particulates/fumes generated during processing.
	Fire Hazard - No	
	Pressure Hazard - No	
	Reactivity Hazard - Yes	If molten

SARA 302 Extremely hazardous substance

Chemical name	CAS number	Reportable quantity	Threshold planning quantity	Threshold planning quantity, lower value	Threshold planning quantity, upper value
Ozone	10028-15-6	100	100 lbs		
Hydrogen chloride	7647-01-0	5000	500 lbs		
Hydrogen fluoride	7664-39-3	100	100 lbs		

SARA 311/312 Hazardous chemical Yes

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Aluminum	7429-90-5	>82
Manganese	7439-96-5	<1.5
Manganese compounds, inorganic	CAS No. Not available	1
Chromium (II) compounds	CAS No. Not available	1
Chromium (III) compounds	CAS No. Not available	1
Chromium (VI) compounds	18540-29-9	1
Chromium (VI) compounds, certain water insoluble forms	CAS No. Not available	1
Chromium (VI) compounds, water soluble forms	CAS No. Not available	1
Ozone	10028-15-6	1
Hydrogen chloride	7647-01-0	1
Hydrogen fluoride	7664-39-3	1

US state regulations

US. California Proposition 65

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

Chromium (VI) compounds (CAS 18540-29-9)	Listed: February 27, 1987
Chromium (VI) compounds, certain water insoluble forms (CAS CAS No. Not available)	Listed: February 27, 1987
Chromium (VI) compounds, water soluble forms (CAS CAS No. Not available)	Listed: February 27, 1987

US - California Proposition 65 - CRT: Listed date/Developmental toxin

Chromium (VI) compounds (CAS 18540-29-9)	Listed: December 19, 2008
Chromium (VI) compounds, certain water insoluble forms (CAS CAS No. Not available)	Listed: December 19, 2008
Chromium (VI) compounds, water soluble forms (CAS CAS No. Not available)	Listed: December 19, 2008

US - California Proposition 65 - CRT: Listed date/Female reproductive toxin

Chromium (VI) compounds (CAS 18540-29-9)	Listed: December 19, 2008
Chromium (VI) compounds, certain water insoluble forms (CAS CAS No. Not available)	Listed: December 19, 2008
Chromium (VI) compounds, water soluble forms (CAS CAS No. Not available)	Listed: December 19, 2008

US - California Proposition 65 - CRT: Listed date/Male reproductive toxin

Chromium (VI) compounds (CAS 18540-29-9)	Listed: December 19, 2008
Chromium (VI) compounds, certain water insoluble forms (CAS CAS No. Not available)	Listed: December 19, 2008
Chromium (VI) compounds, water soluble forms (CAS CAS No. Not available)	Listed: December 19, 2008

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

SDS Status

May 31, 2015: New format.
October 12, 2012: Change(s) in Section: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14 and 15.
June 16, 2009: New format.
Origination date: August 19, 2005

Hazardous Materials Control Committee
Preparer: Jim Perriello, +1-865-977-2051.

SDS System Number: 170975

Revision date May 31, 2015.

Version # 04

Revision Information	Product and Company Identification: Product and Company Identification Composition / Information on Ingredients: Ingredients Physical & Chemical Properties: Multiple Properties Transport Information: Agency Name, Packaging Type, and Transport Mode Selection Regulatory Information: Safety Phrases HazReg Data: North America GHS: Qualifiers
Disclaimer	The information in the sheet was written based on the best knowledge and experience currently available.

Other information

• Aluminum Association's Bulletin F-1, "Guidelines for Handling Aluminum Fines Generated During Various Aluminum Fabricating Operations." The Aluminum Association, 1525 Wilson Boulevard, Suite 600, Arlington, Virginia 22209, www.aluminum.org.
• Aluminum Association, "Guidelines for Handling Molten Aluminum, The Aluminum Association, 1525 Wilson Boulevard, Suite 600, Arlington, Virginia 22209, www.aluminum.org.
• NFPA 484, Standard for Combustible Metals (NFPA phone: 800-344-3555)
• NFPA 654, Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids
• NFPA 70, Standard for National Electrical Code (Electrical Equipment, Grounding and Bonding)
• NFPA 77, Standard for Static Electricity
• Guide to Occupational Exposure Values 2015, Compiled by the American Conference of Governmental Industrial Hygienists (ACGIH).
• NIOSH Pocket Guide to Chemical Hazards, U.S. Department of Health and Human Services, September 2005.
• expub, Expert Publishing, LLC., www.expub.com,
• Ariel, 3E Company, www.3Ecompany.com

Key/Legend:

ACGIH	American Conference of Governmental Industrial Hygienists
AICS	Australian Inventory of Chemical Substances
CAS	Chemical Abstract Services
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CPR	Cardio-pulmonary Resuscitation
DOT	Department of Transportation
DSL	Domestic Substances List (Canada)
EC	Effective Concentration
ED	Effective Dose
EINECS	European Inventory of Existing Commercial Chemical Substances
ENCS	Japan - Existing and New Chemical Substances
EWC	European Waste Catalogue
EPA	Environmental Protective Agency
IARC	International Agency for Research on Cancer
LC	Lethal Concentration
LD	Lethal Dose
MAK	Maximum Workplace Concentration (Germany) "maximale Arbeitsplatz-Konzentration"
NDSL	Non-Domestic Substances List (Canada)
NIOSH	National Institute for Occupational Safety and Health
NTP	National Toxicology Program
OEL	Occupational Exposure Limit
OSHA	Occupational Safety and Health Administration
PIN	Product Identification Number
PMCC	Pensky Marten Closed Cup
RCRA	Resource Conservation and Recovery Act
SARA	Superfund Amendments and Reauthorization Act
SIMDUT	Système d'Information sur les Matières Dangereuses Utilisées au Travail
STEL	Short Term Exposure Limit
TCLP	Toxic Chemicals Leachate Program
TDG	Transportation of Dangerous Goods
TLV	Threshold Limit Value
TSCA	Toxic Substances Control Act
TWA	Time Weighted Average
WHMIS	Workplace Hazardous Materials Information System

m meter, cm centimeter, mm millimeter, in inch,
g gram, kg kilogram, lb pound, µg microgram,
ppm parts per million, ft feet

*** End of SDS ***

SAFETY DATA SHEET

SECTION 1 – PRODUCT AND COMPANY IDENTIFICATION

Manufacturer's name and address:

ARDEX Engineered Cements
400 Ardex Park Dr.
Aliquippa, PA 15001 USA

Supplier's name and address:

Refer to Manufacturer

Information Telephone No.	:	(888) 512-7339 or (724) 203-5000
Website Address	:	http://www.ardexamericas.com
24 Hr Emergency Telephone #	:	**CHEM-TEL: 1-800-255-3924 OR 1-813-248-0585 (call collect)**
Product Identifier	:	**ARDEX FEATHER FINISH® WHITE**
Product ID No.	:	70012151
Trade Name/Synonyms	:	SD-F White
Material Use	:	Cement-based Finishing Underlayment
Uses Advised Against	:	No information available.

SECTION 2 – HAZARDS IDENTIFICATION

GHS Classification per 29 CFR 1910.1200 (OSHA HCS 2012) and HPR (WHMIS 2015)

Skin corrosion/irritation, Category 1A
Serious eye damage/eye irritation, Category 1
Carcinogenicity, Category 1A
Specific target organ toxicity, single exposure; Respiratory tract irritation, Category 3
Specific target organ toxicity, repeated exposure, Category 1.

GHS Pictograms



Signal Word

Danger

Hazard Statements

Causes severe skin burns and eye damage.
May cause cancer by inhalation.
May cause respiratory irritation.
Causes damage to lungs through prolonged or repeated inhalation.

Precautionary Statements

Obtain special instructions before use. (See Section 7.) Do not handle until all safety precautions have been read and understood. Do not breathe dust. Use only outdoors or in a well-ventilated area. Wash hands and exposed skin thoroughly after handling. Wear protective gloves/protective clothing/eye protection. Wash contaminated clothing before reuse. Store in a well-ventilated place. Keep container tightly closed. Protect from sunlight. Store locked up. Dispose of contents / container in accordance with federal, state, and local laws. Do not allow product to enter drains.

Hazards Not Otherwise Classified

None

% With Unknown Acute Toxicity : Up to 40% by weight of this product consists of ingredients with unknown acute toxicity.

SECTION 3 – COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	CAS #	% (by weight)
Calcium aluminate cement	65997-16-2	30 – 60
Limestone	1317-65-3	30 – 60
Calcium sulfate	7778-18-9	10 – 30
Vinyl acetate copolymer	24937-78-8	10 – 30
Cellulose	9004-34-6	1 - 5
Portland cement	65997-15-1	1 - 5
Crystalline silica, quartz**	14808-60-7	0.1 – 0.25

The exact percentages of the ingredients have been withheld by the manufacturer as trade secrets.

**Note: Crystalline Silica (Quartz) is not intentionally added to this product, but is a naturally occurring component in limestone (Calcium Carbonate).

SECTION 4 – FIRST AID MEASURES

General : Call a Poison Center or doctor if you feel unwell.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If experiencing respiratory symptoms: call a doctor/physician.

Skin contact : Remove/Take off immediately all contaminated clothing. Flush affected skin with gently flowing lukewarm water for at least 20 minutes. Seek immediate medical attention/advice.

Eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical advice/attention.

Ingestion : Rinse mouth. Do NOT induce vomiting. Call a POISON CENTER or doctor/physician if you feel unwell.

Notes for Physician : Treat symptomatically.

Signs and symptoms of short-term (acute) exposure

Inhalation : Symptoms may include coughing and shortness of breath.

Skin : Symptoms may include redness and itching. Contact with wet material, or moist areas of skin, causes skin burns. Skin thickening, cracking, or fissuring may occur.

Eyes : Direct contact may strongly irritate or burn the eyes. Could cause blindness.

Ingestion : Symptoms such as gastric pain, nausea, vomiting, and diarrhea may occur.

Effects of long-term (chronic) exposure

: Prolonged inhalation may cause adverse lung effects with symptoms including coughing and shortness of breath. Repeated or prolonged inhalation of fine dusts may cause severe scarring of the lungs, a disease called silicosis, and alveolar proteinosis (lower lung disease).

Indication of need for immediate medical attention or special treatment

: Difficulty breathing persists after removing the person to fresh air.

Any burn to the skin.

Any exposure to the eye which causes irritation.

Ingestion.

SECTION 5 – FIRE FIGHTING MEASURES

Suitable extinguishing media : Carbon dioxide, dry chemical powder, foam.

Unsuitable extinguishing media : Water. Contact with water may cause hydration and formation of caustic alkaline material.

Hazardous combustion products : Calcium oxide, calcium oxalate, vinyl acetate, acetic acid, formic acid, formaldehydes, carbon monoxide, and carbon dioxide.

Special fire-fighting procedures/equipment

: Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode. Move containers from fire area if safe to do so. Water spray may be useful in cooling equipment exposed to heat and flame. After fires have been extinguished, carefully clean all equipment and surfaces exposed to fumes.

Environmental precautions : Do not allow material to enter drains or contaminate ground water system.

Fire hazards/conditions of flammability

: Not flammable under normal conditions of use.

Flammability classification (OSHA 29 CFR 1910.1200, WHMIS 2015)

: Not flammable

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Personal precautions : Restrict access to area until completion of clean-up. All persons dealing with clean-up should wear the appropriate chemically protective equipment.

Protective equipment : Refer to Section 8 on this Safety Data Sheet, EXPOSURE CONTROLS / PERSONAL PROTECTION, for additional information on acceptable personal protective equipment.

Emergency Procedures : If a spill/release in excess of the EPA reportable quantity is made into the environment, immediately notify the national response center in the United States (phone: 1-800-424-8002). Outside of the U.S. call the emergency number listed in Section 1.

US CERCLA Reportable quantity (RQ): None reported.

Methods and materials for containment and cleaning up

: Ventilate area of release. Eliminate all ignition sources. Stop spill or leak at source if safely possible. Contain material, preventing it from entering sewer lines or waterways. Using HEPA vacuum, or other dustless methods, gather up spilled material and place in suitable container for later disposal (see Section 13). Avoid adding water, material becomes alkaline when wet. Notify the appropriate authorities as required.

Prohibited materials : Avoid adding water, material becomes alkaline when wet.

Environmental precautions : Do not allow product to enter drains or waterways. Do not allow material to contaminate ground water system.

Reference to other sections : See Section 13 for disposal information.

SECTION 7 – HANDLING AND STORAGE

Special instructions : Mixing the product according to the directions in the Technical Data Sheet will produce airborne dusts, including crystalline silica. Wear a dust mast (N-95 or higher) while mixing. Use ventilation to control levels of dust in the work area.

Safe handling procedures : Corrosive! Wear chemically resistant protective equipment during handling. Use in a well-ventilated area. Training the workers on the potential health hazards associated with product dust is important. Secondary inhalation exposures could occur when cleaning equipment, or when removing or laundering the clothing. Do not breathe dust. Avoid contact with skin, eyes and clothing. Avoid wet or humid conditions. Keep away from acids and incompatibles. Avoid and control operations which create dust. Keep containers tightly closed when not in use. Wash thoroughly after handling.

Storage requirements : Store in a cool, dry, well-ventilated area. Store away from heat and open flame. Avoid storing in direct sunlight. Store in original container. Keep tightly closed when not in use. Do not reuse empty container without commercial cleaning or reconditioning.

Incompatible materials : See Section 10.

Special packaging materials : Always keep in containers made of the same materials as the supply container.

SECTION 8 – EXPOSURE CONTROLS AND PERSONAL PROTECTION

Permissible Exposure Limits : No exposure limits have been established for the product itself. Below are exposure limits for the components in the product.

Threshold Limit Values for the Ingredients	CAS #	ACGIH TLV		OSHA PEL	
		TWA	STEL	PEL	STEL
Limestone	1317-65-3	TLV Withdrawn In 2007	N/Av	15 mg/m^3 (Total dust); 5 mg/m^3 (respirable)	N/Av
Calcium aluminate cement	65997-16-2	1 mg/m^3 (as Aluminum metal and insoluble compounds)	N/Av	N/Av	N/Av
Calcium sulfate	7778-18-9	10 mg/m^3 (inhalable)	N/Av	15 mg/m^3 (Total dust); 5 mg/m^3 (respirable)	N/Av
Portland cement	65997-15-1	1 mg/m^3 (respirable, no asbestos and < 1% crystalline silica)	N/Av	15 mg/m^3 (Total dust); 5 mg/m^3 (respirable)	N/Av
Cellulose	9004-34-6	10 mg/m^3	N/Av	15 mg/m^3 (Total dust); 5 mg/m^3 (respirable)	N/Av
Vinyl acetate copolymer	24937-78-8	10 mg/m^3 (Total dust); 3 mg/m^3 (respirable)	N/Av	15 mg/m^3 (Total dust); 5 mg/m^3 (respirable)	N/Av
Crystalline silica, quartz	14808-60-7	0.025 mg/m^3 (respirable fraction)	N/Av	0.05mg/m^3 (respirable) (final rule limit)	N/Av

Engineering Controls : Use general or local exhaust ventilation to maintain air concentrations below recommended exposure limits. Ventilation should effectively remove and prevent buildup of any dust generated from the handling of this product.

Personal Protection Equipment

Eye / face protection : Safety glasses or chemical goggles must be worn when using this product. Additionally, a face shield is recommended if splashing is possible.

Skin protection : Wear chemical resistant protective clothing and impervious gloves. Glove materials such as nitrile rubber or Viton (fluorocarbon rubber) are recommended.

Body protection : Where extensive exposure to product is possible, use resistant coveralls, apron and boots to prevent contact.

Respiratory protection : If work process generates excessive quantities of dust, or exposures in excess of any PEL, wear an appropriate particulate respirator (dust mask). Mask should be rated at N-95 or higher.

Site safety equipment : An eyewash station and safety shower should be made available in the immediate working area.

General hygiene considerations : Avoid contact with eyes, skin and clothing. Do not breathe dust. Do not eat, drink or smoke when using this product. Clean all equipment and clothing at end of each work shift.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Physical state	:	solid	**Appearance**	:	white powder
Odor	:	No odor	**Odor threshold**	:	N/Av
pH	:	10 – 12	**Specific gravity**	:	2.7 – 3.1
Boiling point	:	N/Ap	**Coefficient of water/oil distribution**	:	N/Av
Melting/Freezing point	:	N/Av	**Solubility in water**	:	< 55 g/L
Vapor pressure (mm Hg @ 20°C / 68°F)	:	N/Av	**Evaporation rate (*n*-Butyl acetate = 1)**	:	N/Ap
Vapor density (Air = 1)	:	N/Av	**Volatiles (% by weight)**	:	N/Av
Volatile organic compounds (VOCs)	:	0 g/L			
Particle size	:	N/Av	**Flammability classification**	:	Not flammable
Flash point	:	N/Av	**Lower flammable limit (% by vol)**	:	Not available
Flash point method	:	N/Av	**Upper flammable limit (% by vol)**	:	Not available
Auto-ignition temperature	:	N/Av	**Decomposition temperature**	:	Not available
Viscosity	:	Not available	**Oxidizing properties**	:	Not available

Explosion data: Sensitivity to mechanical impact / static discharge

: Not expected to be sensitive to mechanical impact or static discharge.

SECTION 10 – REACTIVITY AND STABILITY INFORMATION

Reactivity : Contact with water may cause hydration and formation of caustic calcium hydroxide.

Stability : Stable under the recommended storage and handling conditions prescribed.

Hazardous reactions : Hazardous polymerization does not occur.

Conditions to avoid : High temperatures.

Materials to avoid and incompatibility

: Oxidizing agents.

Hazardous decomposition products

: None known, refer to hazardous combustion products in Section 5.

SECTION 11 – TOXICOLOGICAL INFORMATION

Routes of exposure : *Inhalation:* YES *Skin Absorption:* NO *Skin and Eyes:* YES *Ingestion:* YES

Symptoms of exposure : See Section 4.

Calculated Acute Toxicity Estimates for the Product

Inhalation : Not Available

Oral : Not Available

Dermal : Not Available

Toxicological data : There are insufficient data for estimating the product's acute toxicity. Several components become caustic in the presence of water, and therefore should not be inhaled, ingested, or allowed to contact skin. See below for individual ingredient acute toxicity data.

Acute Toxicity Parameters for the Ingredients	CAS #	LC50, Inhalation mg/L, Rat, 4 hr	LD50, Oral mg/kg, rat	LD50, Dermal mg/kg, rabbit
Limestone	1317-65-3	N/Av	6,450	N/Av
Calcium aluminate cement	65997-16-2	N/Av	N/Av	N/Av
Calcium sulfate	7778-18-9	N/Av	> 3,000	NAv
Portland cement	65997-15-1	N/Av	N/Av	N/Av
Cellulose	9004-34-6	> 5.8	> 2,000	> 2,000
Vinyl acetate copolymer	24937-78-8	N/Av	> 1,000	N/Av
Crystalline silica, quartz	14808-60-7	N/Av	N/Av	N/Av

Skin corrosion or irritation : Causes skin corrosion when wet.

Serious eye damage / eye irritation : Causes eye burns. May cause blindness.

Respiratory or skin sensitization : Portland cement may cause an allergic skin reaction, in hypersensitive individuals possibly due to trace amounts of chromium.

Germ cell mutagenicity : None known.

Carcinogenic status : This product contains Crystalline silica. Crystalline silica (respirable size) is classified as carcinogenic by inhalation by IARC (Group 1), ACGIH (Group A2), NTP (Group 1) and OSHA (OSHA Select carcinogen). No other components are listed as carcinogens by ACGIH, IARC, OSHA or NTP.

Reproductive toxicity : None known.

Specific Target Organ Toxicity, Single Exposure

: May cause respiratory irritation.

Specific Target Organ Toxicity, Repeated Exposure

: May cause lung damage upon repeated or prolonged exposure.

Aspiration hazard : None known.

Additional information : N/Av

SECTION 12 – ECOLOGICAL INFORMATION

Environmental effects : The product should not be allowed to enter drains or water courses, or be deposited where it can affect ground or surface waters.

Ecotoxicological : No data is available on the product itself.

- **Ecotoxicity** : No data available.
- **Biodegradability** : No data available.
- **Bioaccumulative potential** : No data available.
- **Mobility in soil** : No data available.
- **PBT and vPvB assessment** : No data available.
- **Other adverse effects** : No data available.

SECTION 13 – DISPOSAL CONSIDERATION

Handling for disposal : Handle waste according to recommendations in Section 7.

Methods of disposal : You must test your waste using methods described in 40 CFR Part 261 to determine if it meets applicable definitions of hazardous wastes. Dispose in accordance with all applicable federal, state, provincial and local regulations. Contact your local, state, provincial or federal environmental agency for specific rules.

Packaging : Handle contaminated packaging in the same manner as the product.

RCRA : If this product, as supplied, becomes a waste in the United States, it may meet the criteria of a hazardous waste as defined under RCRA, Title 40 CFR 261. It is the responsibility of the waste generator to determine the proper waste identification and disposal method. For disposal of unused or waste material, check with local, state and federal environmental agencies.

SECTION 14 – TRANSPORTATION INFORMATION

Regulatory Information	UN Number	Shipping Name	Class	Packing Group	Label
TDG	**None**	This product is not regulated according to Canadian TDG regulations.	**None**	**None**	**None**
TDG Additional Information	**None**				
49 CFR/DOT	**None**	This product is not regulated according to US DOT regulations.	**None**	**None**	**None**

49 CFR/DOT Additional Information	**None**

IATA : Not regulated for Air Transport

IMDG : Not regulated for Ocean Transport

SECTION 15 – REGULATORY INFORMATION

Canadian Information:

This product has been classified according to the hazard criteria of the Hazardous Products Regulations (HPR). This SDS contains all of the information required by the HPR.

Canadian Environmental Protection Act (CEPA) information: All ingredients listed appear on either the Domestic Substances List (DSL) or the Non- Domestic Substances List (NDSL).

US Federal Information:

TSCA: All listed ingredients appear on the Toxic Substances Control Act (TSCA) inventory.

CERCLA Reportable Quantity (RQ) (40 CFR 117.302): None reported.

SARA TITLE III: Sec. 311 and 312, SDS Requirements, 40 CFR 370 Hazard Classes:
Immediate (Acute) Health Hazard
Chronic Health Hazard.
Under SARA Sections 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are 500 pounds or the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.

SARA TITLE III: Sec. 313, Toxic Chemicals Notification, 40 CFR 372: This material is not subject to SARA notification requirements, since it does not contain any Toxic Chemical constituents above *de minimus* concentrations.

U.S. State Right To Know Laws
California Proposition 65: Warning! This product contains a chemical known to the State of California to cause cancer. It contains Crystalline silica, quartz.

Other State Right to Know Laws:

Ingredient on State RTK Law?	CAS #	CA	MA	MN	NJ	PA	RI
Limestone	1317-65-3	No	YES	No	YES	YES	YES
Portland cement	65997-15-1	No	YES	No	YES	YES	YES
Calcium sulfate	7778-18-9	No	YES	No	YES	YES	No
Cellulose	9004-34-6	No	YES	No	YES	YES	YES
Crystalline silica, quartz	14808-60-7	No	YES	YES	YES	YES	YES

SECTION 16 – OTHER INFORMATION

HMIS Rating : * - Chronic Hazard 0 - Minimal 1 – Slight 2 – Moderate 3 – Serious 4 – Severe
Health: *3 *Flammability* 0 *Physical Hazard* 1 PPE: G
Gloves, safety glasses, and dust respirator

Legend : ACGIH: American Conference of Governmental Industrial Hygienists
CAS: Chemical Abstract Services
CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CFR: Code of Federal Regulations
DOT: Department of Transportation
DSL: Domestic Substances List
EPA: Environmental Protection Agency

GHS: Globally Harmonized System
HPR: Hazardous Products Regulations
IARC: International Agency for Research on Cancer
Inh: Inhalation
N/Av: Not Available
N/Ap: Not Applicable
NIOSH: National Institute of Occupational Safety and Health
NTP: National Toxicology Program
OSHA: Occupational Safety and Health Administration
PEL: Permissible exposure limit
RCRA: Resource Conservation and Recovery Act
SARA: Superfund Amendments and Reauthorization Act
STEL: Short Term Exposure Limit
TDG: Canadian Transportation of Dangerous Goods Act & Regulations
TLV: Threshold Limit Values
TSCA: Toxic Substance Control Act
TWA: Time Weighted Average
WHMIS: Workplace Hazardous Materials Identification System

Disclaimer of Liability

The Information presented herein is supplied as a guide to those who handle or use this product and has been prepared in good faith by technically knowledgeable personnel. It is not intended to be all-inclusive. The manner and conditions of use and handling may involve other and additional considerations. Safe work practices must be employed when working with any materials. It is important that the end user makes a determination regarding the adequacy of the safety procedures employed during the use of this product.
No warranty of any kind is given or implied. ARDEX Engineered Cements will not be liable for any damages, losses, injuries or consequential damages which may result from the use or reliance on any information contained herein.

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Revision date: **:** 23-Mar-2017

End of Document

Argon

Safety Data Sheet P-4563

This SDS conforms to U.S. Code of Federal Regulations 29 CFR 1910.1200, Hazard Communication.

Date of issue: 01/01/1979 Revision date: 10/13/2016 Supersedes: 10/03/2014

SECTION: 1. Product and company identification

1.1. Product identifier

Product form	:	Substance
Name	:	Argon
CAS No	:	7440-37-1
Formula	:	Ar
Other means of identification	:	Shielding gas, argon 40

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture	:	Industrial use. Use as directed.

1.3. Details of the supplier of the safety data sheet

Praxair, Inc.
10 Riverview Drive
Danbury, CT 06810-6268 - USA
T 1-800-772-9247 (1-800-PRAXAIR) - F 1-716-879-2146
www.praxair.com

1.4. Emergency telephone number

Emergency number : Onsite Emergency: 1-800-645-4633

CHEMTREC, 24hr/day 7days/week
— Within USA: 1-800-424-9300, Outside USA: 001-703-527-3887
(collect calls accepted, Contract 17729)

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture

GHS-US classification

Compressed gas H280

2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US) :



GHS04

Signal word (GHS-US) : WARNING

Hazard statements (GHS-US) : H280 - CONTAINS GAS UNDER PRESSURE; MAY EXPLODE IF HEATED
OSHA-H01 - MAY DISPLACE OXYGEN AND CAUSE RAPID SUFFOCATION

Precautionary statements (GHS-US) : P202 - Do not handle until all safety precautions have been read and understood
P271+P403 - Use and store only outdoors or in a well-ventilated place
CGA-PG05 - Use a back flow preventive device in the piping
CGA-PG10 - Use only with equipment rated for cylinder pressure
CGA-PG06 - Close valve after each use and when empty
CGA-PG02 - Protect from sunlight when ambient temperature exceeds 52°C (125°F)

2.3. Other hazards

Other hazards not contributing to the classification : Asphyxiant in high concentrations.

2.4. Unknown acute toxicity (GHS US)

No data available

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SECTION 3: Composition/Information on ingredients

3.1. Substance

Name : Argon

CAS No : 7440-37-1

Name	Product identifier	%
Argon	(CAS No) 7440-37-1	99.5 - 100

3.2. Mixture

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation : Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.

First-aid measures after skin contact : Adverse effects not expected from this product.

First-aid measures after eye contact : Immediately flush eyes thoroughly with water for at least 15 minutes. Hold the eyelids open and away from the eyeballs to ensure that all surfaces are flushed thoroughly. Contact an ophthalmologist immediately.. Get immediate medical attention.

First-aid measures after ingestion : Ingestion is not considered a potential route of exposure.

4.2. Most important symptoms and effects, both acute and delayed

No additional information available

4.3. Indication of any immediate medical attention and special treatment needed

None.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Use extinguishing media appropriate for surrounding fire.

5.2. Special hazards arising from the substance or mixture

Reactivity : No reactivity hazard other than the effects described in sub-sections below.

5.3. Advice for firefighters

Firefighting instructions : Evacuate all personnel from the danger area. Use self-contained breathing apparatus (SCBA) and protective clothing. Immediately cool containers with water from maximum distance. Stop flow of gas if safe to do so, while continuing cooling water spray. Remove ignition sources if safe to do so. Remove containers from area of fire if safe to do so. On-site fire brigades must comply with OSHA 29 CFR 1910.156 and applicable standards under 29 CFR 1910 Subpart L—Fire Protection.

Protection during firefighting : Compressed gas: asphyxiant. Suffocation hazard by lack of oxygen.

Special protective equipment for fire fighters : Use self-contained breathing apparatus. Standard protective clothing and equipment (Self Contained Breathing Apparatus) for fire fighters.

Specific methods : Use fire control measures appropriate for the surrounding fire. Exposure to fire and heat radiation may cause gas containers to rupture. Cool endangered containers with water spray jet from a protected position. Prevent water used in emergency cases from entering sewers and drainage systems

Stop flow of product if safe to do so

Use water spray or fog to knock down fire fumes if possible.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous. Evacuate area. Ensure adequate air ventilation. Wear self-contained breathing apparatus when entering area unless atmosphere is proven to be safe. Stop leak if safe to do so.

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6.1.1. For non-emergency personnel

No additional information available

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

Try to stop release.

6.3. Methods and material for containment and cleaning up

No additional information available

6.4. Reference to other sections

See also sections 8 and 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Wear leather safety gloves and safety shoes when handling cylinders. Protect cylinders from physical damage; do not drag, roll, slide or drop. While moving cylinder, always keep in place removable valve cover. Never attempt to lift a cylinder by its cap; the cap is intended solely to protect the valve. When moving cylinders, even for short distances, use a cart (trolley, hand truck, etc.) designed to transport cylinders. Never insert an object (e.g, wrench, screwdriver, pry bar) into cap openings; doing so may damage the valve and cause a leak. Use an adjustable strap wrench to remove over-tight or rusted caps. Slowly open the valve. If the valve is hard to open, discontinue use and contact your supplier. Close the container valve after each use; keep closed even when empty. Never apply flame or localized heat directly to any part of the container. High temperatures may damage the container and could cause the pressure relief device to fail prematurely, venting the container contents. For other precautions in using this product, see section 16.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store in a cool, well-ventilated place. Store and use with adequate ventilation. Store only where temperature will not exceed 125°F (52°C). Firmly secure containers upright to keep them from falling or being knocked over. Install valve protection cap, if provided, firmly in place by hand. Store full and empty containers separately. Use a first-in, first-out inventory system to prevent storing full containers for long periods

OTHER PRECAUTIONS FOR HANDLING, STORAGE, AND USE: When handling product under pressure, use piping and equipment adequately designed to withstand the pressures to be encountered. Never work on a pressurized system. Use a back flow preventive device in the piping. Gases can cause rapid suffocation because of oxygen deficiency; store and use with adequate ventilation. If a leak occurs, close the container valve and blow down the system in a safe and environmentally correct manner in compliance with all international, federal/national, state/provincial, and local laws; then repair the leak. Never place a container where it may become part of an electrical circuit.

7.3. Specific end use(s)

None.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Argon (7440-37-1)	
ACGIH	Not established
USA OSHA	Not established

Argon (7440-37-1)	
ACGIH	Not established
USA OSHA	Not established

8.2. Exposure controls

Appropriate engineering controls : Oxygen detectors should be used when asphyxiating gases may be released. Systems under pressure should be regularly checked for leakages. Provide adequate general and local exhaust ventilation. Consider work permit system e.g. for maintenance activities.

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Hand protection	:	Wear working gloves when handling gas containers.
Eye protection	:	Wear safety glasses with side shields.
Respiratory protection	:	When workplace conditions warrant respirator use, follow a respiratory protection program that meets OSHA 29 CFR 1910.134, ANSI Z88.2, or MSHA 30 CFR 72.710 (where applicable). Use an air-supplied or air-purifying cartridge if the action level is exceeded. Ensure that the respirator has the appropriate protection factor for the exposure level. If cartridge type respirators are used, the cartridge must be appropriate for the chemical exposure. For emergencies or instances with unknown exposure levels, use a self-contained breathing apparatus (SCBA).
Thermal hazard protection	:	None necessary.
Environmental exposure controls	:	None necessary.
Other information	:	Wear safety shoes while handling containers.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Gas
Appearance	:	Colorless gas.
Molecular mass	:	40 g/mol
Color	:	Colorless.
Odor	:	No odor warning properties.
Odor threshold	:	No data available
pH	:	Not applicable.
Relative evaporation rate (butyl acetate=1)	:	No data available
Relative evaporation rate (ether=1)	:	Not applicable.
Melting point	:	-189 °C
Freezing point	:	No data available
Boiling point	:	-185.9 °C
Flash point	:	No data available
Critical temperature	:	-122.4 °C
Auto-ignition temperature	:	Not applicable.
Decomposition temperature	:	No data available
Flammability (solid, gas)	:	No data available
Vapor pressure	:	Not applicable.
Critical pressure	:	4898 kPa
Relative vapor density at 20 °C	:	No data available
Relative density	:	No data available
Density	:	0.103 lb/ft^3 Vapor density at 70°F (21.1°C)
Relative gas density	:	1.38
Solubility	:	Water: 61 mg/l
Log Pow	:	Not applicable.
Log Kow	:	Not applicable.
Viscosity, kinematic	:	Not applicable.
Viscosity, dynamic	:	Not applicable.
Explosive properties	:	Not applicable.
Oxidizing properties	:	None.
Explosion limits	:	No data available

9.2. Other information

Gas group	:	Compressed gas
Additional information	:	Gas/vapor heavier than air. May accumulate in confined spaces, particularly at or below ground level

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SECTION 10: Stability and reactivity

10.1. Reactivity

No reactivity hazard other than the effects described in sub-sections below.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

None.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

Using this product in welding and cutting may create additional hazards. The arc from electric arc welding may form gaseous reaction products such as carbon monoxide and carbon dioxide. Ozone and nitrogen oxides may be formed by the radiation from the arc. Other decomposition products of arc welding and cutting originate from the volatilization, reaction, and oxidization of the material being worked.

10.6. Hazardous decomposition products

None.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

Skin corrosion/irritation : Not classified

pH: Not applicable.

Serious eye damage/irritation : Not classified

pH: Not applicable.

Respiratory or skin sensitization : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not classified

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : No ecological damage caused by this product.

12.2. Persistence and degradability

Argon (7440-37-1)	
Persistence and degradability	No ecological damage caused by this product.

Argon (7440-37-1)	
Persistence and degradability	No ecological damage caused by this product.

12.3. Bioaccumulative potential

Argon (7440-37-1)	
Log Pow	Not applicable.
Log Kow	Not applicable.
Bioaccumulative potential	No ecological damage caused by this product.

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Argon (7440-37-1)	
Log Pow	Not applicable.
Log Kow	Not applicable.
Bioaccumulative potential	No ecological damage caused by this product.

12.4. Mobility in soil

Argon (7440-37-1)	
Mobility in soil	No data available.
Ecology - soil	No ecological damage caused by this product.

Argon (7440-37-1)	
Mobility in soil	No data available.
Ecology - soil	No ecological damage caused by this product.

12.5. Other adverse effects

Effect on ozone layer : None

Effect on the global warming : None

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods : May be vented to atmosphere in a well ventilated place. Consult supplier for specific recommendations. Do not discharge into any place where its accumulation could be dangerous. Contact supplier if guidance is required.

Waste disposal recommendations : Dispose of contents/container in accordance with local/regional/national/international regulations. Contact supplier for any special requirements.

SECTION 14: Transport information

In accordance with DOT

Transport document description : UN1006 Argon, compressed, 2.2

UN-No.(DOT) : UN1006

Proper Shipping Name (DOT) : Argon, compressed

Class (DOT) : 2.2 - Class 2.2 - Non-flammable compressed gas 49 CFR 173.115

Hazard labels (DOT) : 2.2 - Non-flammable gas



Additional information

Emergency Response Guide (ERG) Number : 121 (UN1006);120 (UN1951)

Other information : No supplementary information available.

Special transport precautions : Avoid transport on vehicles where the load space is not separated from the driver's compartment. Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency. Before transporting product containers: - Ensure there is adequate ventilation. - Ensure that containers are firmly secured. - Ensure cylinder valve is closed and not leaking. - Ensure valve outlet cap nut or plug (where provided) is correctly fitted. - Ensure valve protection device (where provided) is correctly fitted.

Transport by sea

UN-No. (IMDG) : 1006

Proper Shipping Name (IMDG) : ARGON, COMPRESSED

Class (IMDG) : 2 - Gases

MFAG-No : 121

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Air transport

UN-No. (IATA)	:	1006
Proper Shipping Name (IATA)	:	Argon, compressed
Class (IATA)	:	2
Civil Aeronautics Law	:	Gases under pressure/Gases nonflammable nontoxic under pressure

SECTION 15: Regulatory information

15.1. US Federal regulations

Argon (7440-37-1)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
SARA Section 311/312 Hazard Classes	Sudden release of pressure hazard

All components of this product are listed on the Toxic Substances Control Act (TSCA) inventory.

This product or mixture does not contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

15.2. International regulations

CANADA

Argon (7440-37-1)
Listed on the Canadian DSL (Domestic Substances List)

Argon (7440-37-1)
Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

Argon (7440-37-1)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

15.2.2. National regulations

Argon (7440-37-1)
Listed on the AICS (Australian Inventory of Chemical Substances) Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China) Listed on the Korean ECL (Existing Chemicals List) Listed on NZIoC (New Zealand Inventory of Chemicals) Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances) Listed on INSQ (Mexican National Inventory of Chemical Substances)

15.3. US State regulations

Argon(7440-37-1)	
U.S. - California - Proposition 65 - Carcinogens List	No
U.S. - California - Proposition 65 - Developmental Toxicity	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Female	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No
State or local regulations	U.S. - Massachusetts - Right To Know List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List

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California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

Argon (7440-37-1)				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	Non-significant risk level (NSRL)
No	No	No	No	

Argon (7440-37-1)
U.S. - Massachusetts - Right To Know List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List

SECTION 16: Other information

Other information : When you mix two or more chemicals, you can create additional, unexpected hazards. Obtain and evaluate the safety information for each component before you produce the mixture. Consult an industrial hygienist or other trained person when you evaluate the end product. Before using any plastics, confirm their compatibility with this product

Fumes and gases produced during welding and cutting processes can be dangerous to your health and may cause serious lung disease. KEEP YOUR HEAD OUT OF FUMES. DO NOT BREATHE FUMES AND GASES. Use enough ventilation, local exhaust, or both to keep fumes and gases from your breathing zone and the general area. Short-term overexposure to fumes may cause dizziness, nausea, and dryness or irritation of the nose, throat, and eyes; or may cause other similar discomfort. Contaminants in the air may add to the hazard of fumes and gases. One such contaminant, chlorinated hydrocarbon vapors from cleaning and degreasing activities, poses a special risk. DO NOT USE ELECTRIC ARCS IN THE PRESENCE OF CHLORINATED HYDROCARBON VAPORS—HIGHLY TOXIC PHOSGENE MAY BE PRODUCED. Metal coatings such as paint, plating, or galvanizing may generate harmful fumes when heated. Residues from cleaning materials may also be harmful. AVOID ARC OPERATIONS ON PARTS WITH PHOSPHATE RESIDUES (ANTI-RUST, CLEANING PREPARATIONS)—HIGHLY TOXIC PHOSPHINE MAY BE PRODUCED

Praxair asks users of this product to study this SDS and become aware of the product hazards and safety information. To promote safe use of this product, a user should (1) notify employees, agents, and contractors of the information in this SDS and of any other known product hazards and safety information, (2) furnish this information to each purchaser of the product, and (3) ask each purchaser to notify its employees and customers of the product hazards and safety information

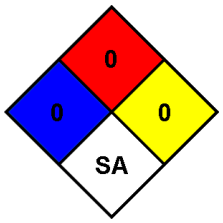
The opinions expressed herein are those of qualified experts within Praxair, Inc. We believe that the information contained herein is current as of the date of this Safety Data Sheet. Since the use of this information and the conditions of use are not within the control of Praxair, Inc, it is the user's obligation to determine the conditions of safe use of the product

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NFPA health hazard	: 0 - Exposure under fire conditions would offer no hazard beyond that of ordinary combustible materials.
NFPA fire hazard	: 0 - Materials that will not burn.
NFPA reactivity	: 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.
NFPA specific hazard	: SA - This denotes gases which are simple asphyxiants.



HMIS III Rating

Health	: 0 Minimal Hazard - No significant risk to health
Flammability	: 0 Minimal Hazard
Physical	: 3 Serious Hazard

SDS US (GHS HazCom 2012) - Praxair

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

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SAFETY DATA SHEET.

Issuing date 16-Apr-2015 **Revision Date** 13-Jun-2015 **Version** 1.01

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier
Product name 64707672 BD1179 RED GREASE

Recommended use of the chemical and restrictions on use

Product code F01519

Product Type Extremely flammable aerosol
Synonyms None

Supplier's details

Recommended Use Penetrant.
Uses advised against No information available

Manufacturer
American Jetway Corporation
34136 Myrtle Street
Wayne, MI 48184-0126

Distributor
Class C Solutions Group
A business of MSC Industrial Supply Co.
75 Maxess Road
Melville,NY 11747-3151
1-866-438-6767

Emergency telephone number
Chemical Emergency Phone Number Chemtrec 1-800-262-8200 ID 1195
Company Emergency Phone Number 734-721-5930

2. HAZARDS IDENTIFICATION

Classification

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A
Specific target organ toxicity (single exposure)	Category 3
Aspiration toxicity	Category 1
Flammable aerosols	Category 1
Gases under pressure	Compressed Gas

GHS Label elements, including precautionary statements

Emergency Overview

DANGER

Hazard Statements
Causes skin irritation
Causes serious eye irritation
May cause respiratory irritation. May cause drowsiness or dizziness
May be fatal if swallowed and enters airways
Extremely flammable aerosol
Contains gas under pressure; may explode if heated



Appearance opaque **Physical state** Aerosol **Odor** Solvent

Precautionary Statements - Prevention
Wash face, hands and any exposed skin thoroughly after handling
Wear protective gloves/eye protection/face protection.
Avoid breathing dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area
Keep away from heat/sparks/open flames/hot surfaces. — No smoking
Do not spray on an open flame or other ignition source
Pressurized container: Do not pierce or burn, even after use

Precautionary Statements - Response
Specific treatment (see first aid on this label)
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention
IF ON SKIN: Wash with plenty of soap and water.
If skin irritation occurs: Get medical advice/attention
Take off contaminated clothing and wash before reuse
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
Call a POISON CENTER or doctor/physician if you feel unwell
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
Do NOT induce vomiting

Precautionary Statements - Storage
Store locked up
Store in a well-ventilated place. Keep container tightly closed
Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

None

Other information

0.2574265% of the mixture consists of ingredient(s) of unknown toxicity

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No	Weight %*
NAPHTHENIC OIL, SEVERLY HYDROT	64742-52-5	20-30
HEPTANE	64742-49-0	20-30
PROPANE/ISOBUTANE/N-BUTANE	68476-86-8	20-30
ACETONE	67-64-1	10-20
BRIGHT STOCK, SEVERELY HYDROTR	64742-57-0	1-10
XYLENE	1330-20-7	0.1-1

*The exact percentage (concentration) of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

First aid measures for different exposure routes

Eye contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. If symptoms persist, call a physician.

Skin contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. If symptoms persist, call a physician.

Inhalation Move to fresh air. If breathing is difficult, give oxygen. Artificial respiration and/or oxygen may be necessary. If breathing has stopped, contact emergency medical services immediately.

Ingestion Rinse mouth. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Call a physician or Poison Control Center immediately.

Most important symptoms/effects, acute and delayed

Main Symptoms Irritating to skin. Causes serious eye damage. Causes drowsiness or dizziness. Harmful or fatal if swallowed and enters airways.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media
Water fog.Dry chemical. Carbon dioxide (CO2). Cool containers/tanks with water spray.

Unsuitable Extinguishing Media Keep away from sources of ignition - No smoking. Cool containers / tanks with water spray.

Specific hazards arising from the chemical
Extremely flammable. Keep product and empty container away from heat and sources of ignition. Risk of ignition. In the event of fire and/or explosion do not breathe fumes. In the event of fire, cool tanks with water spray.

Explosion Data
Sensitivity to Mechanical Impact none.
Sensitivity to Static Discharge Yes.

Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Avoid contact with eyes,skin, and clothing. Avoid breathing vapors or mists. . Use with adequate ventilation. Keep container away from heat,flames, and all other sources of ignition.

Environmental precautions

Environmental precautions Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas. Prevent further leakage or spillage if safe to do so. Do not allow material to contaminate ground water system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained.

Methods and materials for containment and cleaning up

Methods for Containment Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Pick up and transfer to properly labeled containers. Soak up with inert absorbent material. Clean contaminated surface thoroughly. After cleaning, flush away traces with water. Take precautionary measures against static discharges.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Avoid contact with eyes. Avoid breathing vapors or mists. Contents under pressure. Do not puncture or incinerate cans. Do not stick pin or any other sharp object into opening on top of can.

Conditions for safe storage, including any incompatibilities

Technical measures/Storage conditions Keep container tightly closed in a dry and well-ventilated place. Keep away from open flames, hot surfaces and sources of ignition. Keep in properly labeled containers. Keep out of the reach of children. Keep containers tightly closed in a dry, cool and well-ventilated place. Store locked up.

Incompatible products Strong acids, alkalis, or oxidizing agents.

Aerosol Level 3

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines .

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH

HEPTANE 64742-49-0	TLV: 400 ppm STEL: 500 ppm	TWA: 500 ppm	-
PROPANE/ISOBUTANE/N-BUTANE 68476-86-8	74-98-6: TWA: 1000 ppm 106-97-8: STEL: 1000 ppm 75-28-5: STEL: 1000 ppm	74-98-6:TWA: 1000 ppm TWA: 1800 mg/m³ (vacated) TWA: 1000 ppm (vacated) TWA: 1800 mg/m³ 106-97-8: (vacated) TWA: 800 ppm (vacated) TWA: 1900 mg/m³	74-98-6:IDLH: 2100 ppm TWA: 1000 ppm TWA: 1800 mg/m³ 106-97-8:TWA: 800 ppm TWA: 1900 mg/m³ 75-28-5:TWA: 800 ppm TWA: 1900 mg/m³
ACETONE 67-64-1	STEL: 750 ppm TWA: 500 ppm	TWA: 1000 ppm TWA: 2400 mg/m³ (vacated) TWA: 750 ppm (vacated) TWA: 1800 mg/m³ (vacated) STEL: 2400 mg/m³ The acetone STEL does not apply to the cellulose acetate fiber industry. It is in effect for all other sectors (vacated) STEL: 1000 ppm	IDLH: 2500 ppm TWA: 250 ppm TWA: 590 mg/m³
XYLENE 1330-20-7	STEL: 150 ppm TWA: 100 ppm	TWA: 100 ppm TWA: 435 mg/m³ (vacated) TWA: 100 ppm (vacated) TWA: 435 mg/m³ (vacated) STEL: 150 ppm (vacated) STEL: 655 mg/m³	-

ACGIH: (American Conference of Governmental Industrial Hygienists)
OSHA: (Occupational Safety & Health Administration)
NIOSH IDLH: Immediately Dangerous to Life or Health

Other Exposure Guidelines Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

Exposure controls

Engineering Measures Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/Face Protection Safety glasses with side-shields.

Skin and body protection Chemical resistant apron. Protective gloves.

Respiratory protection If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

Hygiene measures Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical and chemical properties

Physical state Aerosol
Appearance opaque
Color red
Odor Solvent
Odor Threshold No information available

Property	Values	Remarks • Methods
pH	0	
Melting/freezing point	No information available	

Boiling point/boiling range	No information available	
Flash Point	-97 °C / -142 °F	Based on propellant
Evaporation rate	No information available	
Flammability (solid, gas)	No information available	
Flammability Limits in Air		
upper flammability limit	No information available	
lower flammability limit	No information available	
Vapor pressure	No information available	
Vapor density	No information available	
Specific Gravity	0.745	
Water solubility	Practically insoluble	
Partition coefficient: n-octanol/water	No information available	
Autoignition temperature	No information available	Not applicable
Decomposition temperature	No information available	
Viscosity	No information available	
Explosive properties	No information available	

Other information

VOC Content(%)	49.85
MIR Value	0.59

10. STABILITY AND REACTIVITY

Reactivity
No data available

Chemical stability
Stable under recommended storage conditions.

Possibility of hazardous reactions
None under normal processing.

Conditions to Avoid
Extremes of temperature and direct sunlight.

Incompatible Materials
Strong acids, alkalis, or oxidizing agents.

Hazardous Decomposition Products
None known based on information supplied.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Inhalation Vapors may irritate throat and respiratory system. May cause drownsiness and dizziness based on components. May cause irritation of respiratory tract. Avoid breathing vapors or mists.

Eye contact Irritating to eyes. Avoid contact with eyes.

Skin contact Irritating to skin. Avoid contact with skin.

Ingestion May be harmful or fatal if swallowed. Aspiration into the lungs during swallowing may cause serious lung damage which may be fatal.

Component Information

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation

HEPTANE 64742-49-0	> 5000 mg/kg (Rat)	> 3160 mg/kg (Rabbit)	= 73680 ppm (Rat) 4 h
ACETONE 67-64-1	= 5800 mg/kg	20,000 mg/kg (Rabbit)	= 50100 mg/m³ (Rat) 8 h
XYLENE 1330-20-7	= 3500 mg/kg (Rat)	> 4350 mg/kg (Rabbit)	= 29.08 mg/L (Rat) 4 h

Information on toxicological effects

Symptoms Symptoms of overexposure may be headache,dizziness, tiredness, nausea,and vomiting. Causes skin and eye irritation. May cause respiratory system irritation. Prolonged or repeated exposure may cause dermatitis. Not acutely toxic. Aspiration into the lungs during swallowing may cause serious lung damage which may be fatal.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation Irritating to skin.
Eye damage/irritation Irritating to eyes.
Irritation Irritating to eyes, respiratory system and skin.
Sensitization None known.
Germ Cell Mutagenicity None known.
Carcinogenicity The table below indicates whether each agency has evaluated a listed ingredient as a carcinogen.

Chemical Name	ACGIH	IARC	NTP	OSHA
XYLENE 1330-20-7	-	Group 3	-	-

ACGIH: (American Conference of Governmental Industrial Hygienists)
A2 - Suspected Human Carcinogen
IARC: (International Agency for Research on Cancer)
Group 1 - Carcinogenic to Humans
Group 3 - Not Classifiable as to Carcinogenicity in Humans
OSHA: (Occupational Safety & Health Administration)
X - Present

Reproductive toxicity This product does not contain any known or suspected reproductive hazards.
Specific target organ systemic toxicity (single exposure) May cause respiratory irritation. May cause drowsiness and dizziness.
Specific target organ systemic toxicity (repeated exposure) No information available.
Target Organ Effects Central nervous system, Eyes, Respiratory system, Skin.
Neurological effects Intentional misuse by deliberately concentrating and inhaling contents may be harmful or fatal.
Aspiration hazard May be fatal if swallowed and enters airways.

Numerical measures of toxicity - Product Information

Unknown Acute Toxicity 0.2574265% of the mixture consists of ingredient(s) of unknown toxicity
The following values are calculated based on chapter 3.1 of the GHS document .
ATEmix (oral) 8647 mg/kg
ATEmix (dermal) 10941 mg/kg
ATEmix (inhalation-dust/mist) 973.1 mg/l
ATEmix (inhalation-vapor) 86 mg/l

12. ECOLOGICAL INFORMATION

Ecotoxicity

Chemical Name	Toxicity to algae	Toxicity to fish	Toxicity to microorganisms	Toxicity to daphnia and other aquatic invertebrates
NAPHTHENIC OIL, SEVERLY HYDROT 64742-52-5	-	5000 mg/L LC50 Oncorhynchus mykiss 96h	-	1000 mg/L EC50 Daphnia magna 48h
PROPANE/ISOBUTANE/N-BUTANE 68476-86-8	-	-	-	-

ACETONE 67-64-1	-	4.74 - 6.33 mL/L LC50 Oncorhynchus mykiss 96h 6210 - 8120 mg/L LC50 Pimephales promelas 96h static 8300 mg/L LC50 Lepomis macrochirus 96h	-	10294 - 17704 mg/L EC50 Daphnia magna 48h Static 12600 - 12700 mg/L EC50 Daphnia magna 48h
XYLENE 1330-20-7	-	13.1 - 16.5 mg/L LC50 Lepomis macrochirus 96h flow-through 13.5 - 17.3 mg/L LC50 Oncorhynchus mykiss 96h 2.661 - 4.093 mg/L LC50 Oncorhynchus mykiss 96h static 23.53 - 29.97 mg/L LC50 Pimephales promelas 96h static 30.26 - 40.75 mg/L LC50 Poecilia reticulata 96h static 7.711 - 9.591 mg/L LC50 Lepomis macrochirus 96h static 13.4 mg/L LC50 Pimephales promelas 96h flow-through 19 mg/L LC50 Lepomis macrochirus 96h 780 mg/L LC50 Cyprinus carpio 96h semi-static 780 mg/L LC50 Cyprinus carpio 96h	-	0.6 mg/L LC50 Gammarus lacustris 48h 3.82 mg/L EC50 water flea 48h

Persistence and degradability
No information available.

Bioaccumulation
No information available.

Chemical Name	log Pow
PROPANE/ISOBUTANE/N-BUTANE 68476-86-8	2.8
ACETONE 67-64-1	-0.24
XYLENE 1330-20-7	3.15

Other adverse effects No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment

Waste Disposal Methods This material, as supplied, is a hazardous waste according to federal regulations (40 CFR 261).

Contaminated packaging Do not re-use empty containers.

14. TRANSPORT INFORMATION

DOT Ground CONSUMER COMMODITY ORM-D
or
LIMITED QUANTITY

IATA UN1950, AEROSOLS, FLAMMABLE, 2.1, LTD. QTY.

IMDG UN1950, AEROSOLS, 2.1, LTD. QTY.

15. REGULATORY INFORMATION

International Inventories

Chemical Name	TSCA	DSL/NDSL	EINECS/ELINCS	ENCS	IECSC	KECL	PICCS	AICS
NAPHTHENIC OIL, SEVERLY HYDROT	X	X	X	X	X	X	X	X
HEPTANE	X	X	X	X	X	X	X	X
PROPANE/ISOBUTANE/N-BUTANE	X	X	X	Not listed	X	X	X	X
ACETONE	X	X	X	X	X	X	X	X
BRIGHT STOCK, SEVERELY HYDROTR	X	X	X	X	X	X	X	X
XYLENE	X	X	X	X	X	X	X	X

Legend:
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
CHINA - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

U.S. Federal Regulations

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

Chemical Name	CAS-No	Weight %*	SARA 313 - Threshold Values %
XYLENE - 1330-20-7	1330-20-7	0.1-1	1.0

SARA 311/312 Hazard Categories

Acute Health Hazard	Yes
Chronic Health Hazard	Yes
Fire Hazard	Yes
Sudden Release of Pressure Hazard	Yes
Reactive Hazard	no

Clean Water Act
This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42):

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
XYLENE 1330-20-7	100 lb			X

CERCLA
This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302):

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	RQ
ACETONE 67-64-1	5000 lb		RQ 5000 lb final RQ RQ 2270 kg final RQ
XYLENE 1330-20-7	100 lb		RQ 100 lb final RQ RQ 45.4 kg final RQ

U.S. State Regulations

California Proposition 65

This product does not contain any known Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
ACETONE 67-64-1	X	X	X
XYLENE 1330-20-7	X	X	X

EPA Pesticide Registration Number Not applicable

Canada

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

WHMIS Hazard Class

A Compressed gases
B5 Flammable aerosol
D2B Toxic materials



16. OTHER INFORMATION

NFPA	**Health Hazard** 2	**Flammability** 4	**Instability** 0	**Physical and chemical hazards** -
HMIS	**Health Hazard** 2	**Flammability** 4	**Physical Hazard** 1	**Personal protection** X

Prepared By

American Jetway
34136 Myrtle Street
Wayne, MI 48184

Tel.734-721-5930

Issuing date 16-Apr-2015
Revision Date 13-Jun-2015
Revision Note

No information available

Disclaimer

The information provided on this SDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of Safety Data Sheet

SAFETY DATA SHEET.

Issuing date 15-May-2015 **Revision Date** 27-Jul-2015 **Version** 2.02

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier
Product name BD1553 RED GREASE LOW VOC

Recommended use of the chemical and restrictions on use

Product code F02862

Product Type Extremely flammable aerosol
Synonyms None

Supplier's details

Recommended Use Penetrant.
Uses advised against No information available

Manufacturer
American Jetway Corporation
34136 Myrtle Street
Wayne, MI 48184-0126

Distributor
Class C Solutions Group
A business of MSC Industrial Supply Co.
75 Maxess Road
Melville,NY 11747-3151
1-866-438-6767

Emergency telephone number
Chemical Emergency Phone Number Chemtrec 1-800-262-8200 ID 1195
Company Emergency Phone Number 734-721-5930

2. HAZARDS IDENTIFICATION

Classification

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A
Specific target organ toxicity (single exposure)	Category 3
Aspiration toxicity	Category 1
Flammable aerosols	Category 1
Gases under pressure	Compressed Gas

GHS Label elements, including precautionary statements

Emergency Overview

DANGER

Hazard Statements
Causes skin irritation
Causes serious eye irritation
May cause respiratory irritation. May cause drowsiness or dizziness
May be fatal if swallowed and enters airways
Extremely flammable aerosol
Contains gas under pressure; may explode if heated



Appearance opaque **Physical state** Aerosol **Odor** Solvent

Precautionary Statements - Prevention
Wash face, hands and any exposed skin thoroughly after handling
Wear protective gloves/protective clothing/eye protection/face protection
Avoid breathing dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area
Keep away from heat/sparks/open flames/hot surfaces. — No smoking
Do not spray on an open flame or other ignition source
Pressurized container: Do not pierce or burn, even after use

Precautionary Statements - Response
Specific treatment (see first aid on this label)
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention
IF ON SKIN: Wash with plenty of soap and water.
Take off contaminated clothing and wash before reuse
If skin irritation occurs: Get medical advice/attention
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
Call a POISON CENTER or doctor/physician if you feel unwell
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
Do NOT induce vomiting

Precautionary Statements - Storage
Store locked up
Store in a well-ventilated place. Keep container tightly closed
Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

None

Other information

0.25743672% of the mixture consists of ingredient(s) of unknown toxicity

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No	Weight %*
NAPHTHENIC OIL, SEVERLY HYDROT	64742-52-5	30-40
PROPANE/ISOBUTANE/N-BUTANE	68476-86-8	20-30
HYDROCARBON SOLVENT	64742-96-7	10-20
ACETONE	67-64-1	1-10
BRIGHT STOCK, SEVERELY HYDROTR	64742-57-0	1-10
METHYL ACETATE	79-20-9	1-10
XYLENE	1330-20-7	0.1-1

*The exact percentage (concentration) of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

First aid measures for different exposure routes

General advice Avoid contact with eyes,skin, and clothing.Avoid breathing, vapors,mist,or gas.

Eye contact Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Seek immediate medical attention/advice.

Skin contact Wash off immediately with soap and plenty of water. Remove and wash contaminated clothing before re-use. Get medical attention immediately if symptoms occur.

Inhalation Move to fresh air. If not breathing, give artificial respiration. If breathing has stopped, contact emergency medical services immediately.

Ingestion Do NOT induce vomiting. Call a physician immediately. Never give anything by mouth to an unconscious person. Risk of product entering the lungs on vomiting after ingestion.

Most important symptoms/effects, acute and delayed

Main Symptoms Causes skin and eye irritation. Inhalation causing Central Nervous System effects.Ingestion causing lung damage.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media Decomposition by contact with water may generate vapors which can be ignited by heat or open flame.

Specific hazards arising from the chemical
No information available.

Explosion Data
Sensitivity to Mechanical Impact none.
Sensitivity to Static Discharge Yes.

Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Evacuate personnel to safe areas. Absorb with sand ,clay, or other suitable material. Hard surfaces may be mopped with water. Avoid contact with skin, eyes and clothing. Ensure adequate ventilation. Avoid dust formation. Remove all sources of ignition. Keep people away from and upwind of spill/leak. Take precautionary measures against static discharges.

Other information ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Wear personal protective equipment.

Environmental precautions

Environmental precautions Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas. Prevent further leakage or spillage if safe to do so. Do not allow material to contaminate ground water system. Prevent product from entering drains.

Methods and materials for containment and cleaning up

Methods for Containment Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Pick up and transfer to properly labeled containers. Soak up with inert absorbent material. Clean contaminated surface thoroughly. After cleaning, flush away traces with water. Take precautionary measures against static discharges.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Avoid contact with eyes. Avoid breathing vapors or mists. Contents under pressure. Do not puncture or incinerate cans. Do not stick pin or any other sharp object into opening on top of can.

Conditions for safe storage, including any incompatibilities

Technical measures/Storage conditions Keep container tightly closed in a dry and well-ventilated place. Keep away from open flames, hot surfaces and sources of ignition. Keep in properly labeled containers. Keep out of the reach of children. Store locked up.

Incompatible products Strong acids, alkalis, or oxidizing agents.

Aerosol Level 3

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines .

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
PROPANE/ISOBUTANE/N-BUTANE 68476-86-8	74-98-6: TWA: 1000 ppm 106-97-8: STEL: 1000 ppm 75-28-5: STEL: 1000 ppm	74-98-6:TWA: 1000 ppm TWA: 1800 mg/m³ (vacated) TWA: 1000 ppm (vacated) TWA: 1800 mg/m³ 106-97-8: (vacated) TWA: 800 ppm (vacated) TWA: 1900 mg/m³	74-98-6:IDLH: 2100 ppm TWA: 1000 ppm TWA: 1800 mg/m³ 106-97-8:TWA: 800 ppm TWA: 1900 mg/m³ 75-28-5:TWA: 800 ppm TWA: 1900 mg/m³
ACETONE 67-64-1	STEL: 500 ppm TWA: 250 ppm	TWA: 1000 ppm TWA: 2400 mg/m³ (vacated) TWA: 750 ppm (vacated) TWA: 1800 mg/m³ (vacated) STEL: 2400 mg/m³ The acetone STEL does not apply to the cellulose acetate fiber industry. It is in effect for all other sectors (vacated) STEL: 1000 ppm	IDLH: 2500 ppm TWA: 250 ppm TWA: 590 mg/m³
METHYL ACETATE 79-20-9	STEL: 250 ppm TWA: 200 ppm	TWA: 200 ppm TWA: 610 mg/m³ (vacated) TWA: 200 ppm (vacated) TWA: 610 mg/m³ (vacated) STEL: 250 ppm (vacated) STEL: 760 mg/m³	IDLH: 3100 ppm TWA: 200 ppm TWA: 610 mg/m³ STEL: 250 ppm STEL: 760 mg/m³
XYLENE 1330-20-7	STEL: 150 ppm TWA: 100 ppm	TWA: 100 ppm TWA: 435 mg/m³ (vacated) TWA: 100 ppm (vacated) TWA: 435 mg/m³ (vacated) STEL: 150 ppm (vacated) STEL: 655 mg/m³	-

ACGIH: (American Conference of Governmental Industrial Hygienists)
OSHA: (Occupational Safety & Health Administration)
NIOSH IDLH: Immediately Dangerous to Life or Health

Other Exposure Guidelines Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

Exposure controls

Engineering Measures Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/Face Protection Safety glasses with side-shields.

Skin and body protection Chemical resistant apron. Protective gloves.

Respiratory protection If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

Hygiene measures Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical and chemical properties

Physical state Aerosol

Appearance	opaque	**Odor**	Solvent
Color	red	**Odor Threshold**	No information available

Property	**Values**	**Remarks • Methods**
pH	No information available	
Melting/freezing point	No information available	
Boiling point/boiling range	No information available	
Flash Point	-97 °C / -143 °F	Based on propellant
Evaporation rate	No information available	
Flammability (solid, gas)	No information available	
Flammability Limits in Air		
upper flammability limit	No information available	
lower flammability limit	No information available	
Vapor pressure	No information available	
Vapor density	No information available	
Specific Gravity	0.809	
Water solubility	Practically insoluble	
Partition coefficient: n-octanol/water	No information available	
Autoignition temperature	No information available	Not applicable
Decomposition temperature	No information available	
Viscosity	No information available	
Explosive properties	No information available	

Other information

VOC Content(%) 20.96

10. STABILITY AND REACTIVITY

Reactivity
No data available

Chemical stability
Stable under recommended storage conditions.

Possibility of hazardous reactions
None under normal processing.

Conditions to Avoid
Extremes of temperature and direct sunlight.

Incompatible Materials
Strong acids, alkalis, or oxidizing agents.

Hazardous Decomposition Products
None known based on information supplied.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Inhalation	Vapors may irritate throat and respiratory system. May cause drownsiness and dizziness based on components. May cause irritation of respiratory tract. Avoid breathing vapors or mists.
Eye contact	Irritating to eyes. Avoid contact with eyes.
Skin contact	Irritating to skin. Repeated exposure may cause skin dryness or cracking. Prolonged skin contact may defat the skin and produce dermatitis. Avoid contact with skin.

Ingestion May be harmful if swallowed. Aspiration into the lungs during swallowing may cause serious lung damage which may be fatal.

Component Information

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
HYDROCARBON SOLVENT 64742-96-7	> 5000 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	> 5.28 mg/L (Rat) 4 h
ACETONE 67-64-1	= 5800 mg/kg (Rat)	-	= 50100 mg/m³ (Rat) 8 h
METHYL ACETATE 79-20-9	> 5 g/kg (Rat)	> 5 g/kg (Rabbit)	= 16000 ppm (Rat) 4 h
XYLENE 1330-20-7	= 3500 mg/kg (Rat)	> 4350 mg/kg (Rabbit)	= 29.08 mg/L (Rat) 4 h

Information on toxicological effects

Symptoms Symptoms of overexposure may be headache,dizziness, tiredness, nausea,and vomiting.May be harmful if swallowed and enters lungs and airways.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation Irritating to skin.
Eye damage/irritation Irritating to eyes.
Irritation Irritating to eyes, respiratory system and skin.
Sensitization None known.
Germ Cell Mutagenicity None known.
Carcinogenicity The table below indicates whether each agency has evaluated a listed ingredient as a carcinogen.

Chemical Name	ACGIH	IARC	NTP	OSHA
XYLENE 1330-20-7	-	Group 3	-	-

ACGIH: (American Conference of Governmental Industrial Hygienists)
A2 - Suspected Human Carcinogen
IARC: (International Agency for Research on Cancer)
Group 1 - Carcinogenic to Humans
Group 3 - Not Classifiable as to Carcinogenicity in Humans
OSHA: (Occupational Safety & Health Administration)
X - Present

Reproductive toxicity This product does not contain any known or suspected reproductive hazards.
Specific target organ systemic toxicity (single exposure) May cause respiratory irritation. May cause drowsiness and dizziness.
Specific target organ systemic toxicity (repeated exposure) None under normal use conditions.
Chronic toxicity Chronic hydrocarbon abuse has been associated with irregular heart rhythms and potential cardiac arrest. Prolonged skin contact may defat the skin and produce dermatitis.
Target Organ Effects Central nervous system, Eyes, Respiratory system, Skin.
Neurological effects Intentional misuse by deliberately concentrating and inhaling contents may be harmful or fatal.
Aspiration hazard May be fatal if swallowed and enters airways.

Numerical measures of toxicity - Product Information

Unknown Acute Toxicity 0.25743672% of the mixture consists of ingredient(s) of unknown toxicity
The following values are calculated based on chapter 3.1 of the GHS document .
ATEmix (oral) 25301 mg/kg
ATEmix (dermal) 11494 mg/kg
ATEmix (inhalation-dust/mist) 1150 mg/l
ATEmix (inhalation-vapor) 406031 mg/l

12. ECOLOGICAL INFORMATION

Ecotoxicity

Chemical Name	Toxicity to algae	Toxicity to fish	Toxicity to microorganisms	Toxicity to daphnia and other aquatic invertebrates
NAPHTHENIC OIL, SEVERLY HYDROT 64742-52-5	-	5000 mg/L LC50 Oncorhynchus mykiss 96h	-	1000 mg/L EC50 Daphnia magna 48h
PROPANE/ISOBUTANE/N-BUTANE 68476-86-8	-	-	-	-
ACETONE 67-64-1	-	4.74 - 6.33 mL/L LC50 Oncorhynchus mykiss 96h 6210 - 8120 mg/L LC50 Pimephales promelas 96h static 8300 mg/L LC50 Lepomis macrochirus 96h	-	10294 - 17704 mg/L EC50 Daphnia magna 48h Static 12600 - 12700 mg/L EC50 Daphnia magna 48h
METHYL ACETATE 79-20-9	120 mg/L EC50 Desmodesmus subspicatus 72h	295 - 348 mg/L LC50 Pimephales promelas 96h flow-through 250 - 350 mg/L LC50 Brachydanio rerio 96h static	-	1026.7 mg/L EC50 Daphnia magna 48h
XYLENE 1330-20-7	-	13.4 mg/L LC50 Pimephales promelas 96h flow-through 2.661 - 4.093 mg/L LC50 Oncorhynchus mykiss 96h static 13.5 - 17.3 mg/L LC50 Oncorhynchus mykiss 96h 13.1 - 16.5 mg/L LC50 Lepomis macrochirus 96h flow-through 19 mg/L LC50 Lepomis macrochirus 96h 7.711 - 9.591 mg/L LC50 Lepomis macrochirus 96h static 780 mg/L LC50 Cyprinus carpio 96h 30.26 - 40.75 mg/L LC50 Poecilia reticulata 96h static 23.53 - 29.97 mg/L LC50 Pimephales promelas 96h static 780 mg/L LC50 Cyprinus carpio 96h semi-static	-	3.82 mg/L EC50 water flea 48h 0.6 mg/L LC50 Gammarus lacustris 48h

Persistence and degradability
No information available.

Bioaccumulation
No information available.

Chemical Name	log Pow
PROPANE/ISOBUTANE/N-BUTANE 68476-86-8	<=2.8
ACETONE 67-64-1	-0.24
METHYL ACETATE 79-20-9	0.18
XYLENE 1330-20-7	2.77 - 3.15

Other adverse effects No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment

Waste Disposal Methods This material, as supplied, is a hazardous waste according to federal regulations (40 CFR 261).

Contaminated packaging Do not re-use empty containers.

14. TRANSPORT INFORMATION

DOT Ground CONSUMER COMMODITY ORM-D
or
LIMITED QUANTITY

IATA UN1950, AEROSOLS, FLAMMABLE, 2.1, LTD. QTY.

IMDG UN1950, AEROSOLS, 2.1, LTD. QTY.

15. REGULATORY INFORMATION

International Inventories

Chemical Name	TSCA	DSL/NDSL	EINECS/ELINCS	ENCS	IECSC	KECL	PICCS	AICS
NAPHTHENIC OIL, SEVERLY HYDROT	X	X	X	Not listed	X	X	X	X
PROPANE/ISOBUTANE/N-BUTANE	X	X	X	Not listed	X	X	X	X
HYDROCARBON SOLVENT	X	X	X	Not listed	X	X	X	X
ACETONE	X	X	X	X	X	X	X	X
BRIGHT STOCK, SEVERELY HYDROTR	X	X	X	Not listed	X	X	X	X
METHYL ACETATE	X	X	X	X	X	X	X	X
XYLENE	X	X	X	X	X	X	X	X

Legend:
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
CHINA - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

U.S. Federal Regulations

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

Chemical Name	CAS-No	Weight %*	SARA 313 - Threshold Values %
XYLENE - 1330-20-7	1330-20-7	0.1-1	1.0

SARA 311/312 Hazard Categories
Acute Health Hazard Yes

Chronic Health Hazard	Yes
Fire Hazard	Yes
Sudden Release of Pressure Hazard	Yes
Reactive Hazard	no

Clean Water Act

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42):

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
XYLENE 1330-20-7	100 lb			X

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302):

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	RQ
ACETONE 67-64-1	5000 lb		RQ 5000 lb final RQ RQ 2270 kg final RQ
XYLENE 1330-20-7	100 lb		RQ 100 lb final RQ RQ 45.4 kg final RQ

U.S. State Regulations

California Proposition 65

This product does not contain any known Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
ACETONE 67-64-1	X	X	X
METHYL ACETATE 79-20-9	X	X	X
XYLENE 1330-20-7	X	X	X

EPA Pesticide Registration Number Not applicable

Canada

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

WHMIS Hazard Class

A Compressed gases
D2B Toxic materials
B5 Flammable aerosol



16. OTHER INFORMATION

NFPA	**Health Hazard** 2	**Flammability** 4	**Instability** 0	**Physical and chemical hazards** -
HMIS	**Health Hazard** 2	**Flammability** 4	**Physical Hazard** 1	**Personal protection** B

Prepared By

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Wayne, MI 48184

Tel.734-721-5930

Issuing date 15-May-2015
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Revision Note
No information available

Disclaimer

The information provided on this SDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of Safety Data Sheet

Safety Data Sheet

Printing date 04/01/2015 **Version Number 1.2** **Reviewed on 04/01/2015**

*

1 Identification

Product identifier

Trade name: ***Bituthene System 4000 Surface Conditioner or Perm-A-Barrier Surface Conditioner***

SDS ID Number: 60176

Relevant identified uses of the substance or mixture and uses advised against
Specialty construction product. Not intended for other uses

Details of the supplier of the safety data sheet

Manufacturer/Supplier:

W.R. Grace & Co. -Conn.
62 Whittemore Avenue
Cambridge, MA 02140 USA

Grace Canada, Inc.
294 Clements Road W.
Ajax, Ontario L1S 3C6 Canada

Information department:

Environmental Health & Safety
USA: +1-617-876-1400 (24 hours)
+1-800-354-5414 (8AM - 5PM) Not functional within Massachusetts
CAN: 1-905-683-8561 (24 hours)

Transport Emergency: Chemtrec +1-800-424-9300 (24 hours)

2 Composition/information on ingredients

Chemical characterization: Mixtures

Description: Mixture of the substances listed below with additional nonhazardous ingredients.

Hazardous components:		
67-56-1	Methanol	2.0-5.0%

Additional information: For the wording of the listed risk phrases refer to section 16.

*

3 Hazard(s) identification

Classification of the substance or mixture

May cause damage to organs.
Combustible liquid.

GHS label elements The product is classified and labeled according to the Globally Harmonized System (GHS).

Hazard pictograms



GHS08

(Cont. on page 2)

Safety Data Sheet

Trade name: *Bituthene System 4000 Surface Conditioner or Perm-A-Barrier Surface Conditioner*

(Cont. from page 1)

Warning

Hazard-determining components of labeling:
Methanol
Precautionary statements
Keep away from flames and hot surfaces. – No smoking.
Wear protective gloves / eye protection / face protection.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
In case of fire: Use for extinction: CO2, powder or water spray.
Store in a well-ventilated place. Keep cool.
NFPA ratings (scale 0 - 4)



Health = 2
Fire = 2
Reactivity = 0

HMIS-ratings (scale 0 - 4)



Health = *2
Flammability = 2
Reactivity = 0

*
4 First-aid measures

General information: Get medical advice/attention if you feel unwell.

After inhalation:

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

After skin contact:

Immediately wash contaminated skin with soap or mild detergent and water. If this chemical soaks clothing, immediately remove clothing and wash skin.

After eye contact:

Rinse opened eye for several minutes under running water.

Seek immediate medical advice.

After swallowing:

Wash out mouth with water

Rinse mouth.

Do not induce vomiting; immediately call for medical help.

Never give anything by mouth to an unconscious person.

*
5 Fire-fighting measures

Special hazards arising from the substance or mixture No further relevant information available.

Additional information Collect contaminated fire fighting water separately. It must not enter the sewage system.

(Cont. on page 3)

Safety Data Sheet

Trade name: *Bituthene System 4000 Surface Conditioner or Perm-A-Barrier Surface Conditioner*

(Cont. from page 2)

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

Wear protective equipment. Keep unprotected persons away.

Methods and material for containment and cleaning up:

Contain and/or absorb spill with inert material (i.e. sand, vermiculite) then place in a suitable container.

Sweep up spilled product into receptacles.

Dispose contaminated material as waste according to section 13 of the SDS.

Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

*

7 Handling and storage

Handling:

Precautions for safe handling Prevent formation of aerosols.

Information about protection against explosions and fires:

Empty containers may retain hazardous residue, both liquid and vapor.

Storage:

Information about storage in one common storage facility: No special measures required.

Further information about storage conditions: Keep receptacle tightly sealed.

Specific end use(s) No further relevant information available.

*

8 Exposure controls/personal protection

Additional information about design of technical systems: No further data; see item 7.

Components with limit values that require monitoring at the workplace:	
67-56-1 Methanol	
PEL (USA)	Long-term value: 260 mg/m³, 200 ppm
REL (USA)	Short-term value: 325 mg/m³, 250 ppm Long-term value: 260 mg/m³, 200 ppm Skin
TLV (USA)	Short-term value: 328 mg/m³, 250 ppm Long-term value: 262 mg/m³, 200 ppm Skin; BEI

Ingredients with biological limit values:	
67-56-1 Methanol	
BEI (USA)	15 mg/L Medium: urine Time: end of shift Parameter: Methanol (background, nonspecific)

Additional information: The lists that were valid during the creation were used as basis.

(Cont. on page 4)

Safety Data Sheet

Trade name: *Bituthene System 4000 Surface Conditioner or Perm-A-Barrier Surface Conditioner*

(Cont. from page 3)

Personal protective equipment:

General protective and hygienic measures:

Avoid contact with the eyes and skin.

The usual precautionary measures for handling chemicals should be followed.

Breathing equipment:
Respiratory protection is not normally required. If a vapor or mist is created, use an approved dust/mist respirator (NIOSH N95).

Protection of hands:
PVA gloves
Gloves should be worn to prevent skin contact and should be impermeable and resistant to the product.

Material of gloves
Gloves should be worn to prevent skin contact and should be impermeable and resistant to the product.

Eye protection:



Safety glasses with side shield protection.

Safety glasses with side shields should be worn to prevent contact due to splashing. Under high vapor mist concentrations, tightly sealed goggles should be worn.



A face shield should also be worn if there is potential exposure to splash or spray.

Body protection:

Protective work clothing

Use personal protective equipment as required.

Take off contaminated clothing and wash before reuse.

*

9 Physical and chemical properties

General Information	
Appearance:	
Form:	Liquid
Color:	According to product specification
Odor:	Characteristic
Odour threshold:	Not determined.
pH-value (~) at 20 °C (68 °F):	8
Change in condition	
Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	> 100 °C (> 212 °F)
Flash point:	> 61 °C (> 142 °F)
Flammability (solid, gaseous):	Not applicable.
Decomposition temperature:	Not determined.
Auto igniting:	Product is not selfigniting.

(Cont. on page 5)

Safety Data Sheet

Trade name: *Bituthene System 4000 Surface Conditioner or Perm-A-Barrier Surface Conditioner*

(Cont. from page 4)

Danger of explosion:	In use, may form flammable/explosive vapor-air mixture.
Explosion limits:	
Lower:	Not determined.
Upper:	Not determined.
VOC Content (max):	Not determined.
Vapor pressure:	Not determined.
Density: (~) at 20 °C (68 °F)	1.1 g/cm³ (9.18 lbs/gal)
Relative density	Not determined.
Vapour density	Not determined.
Evaporation rate	Not determined.
Solubility in / Miscibility with	
Water:	Fully miscible.
Partition coefficient (n-octanol/water):	Not determined.
Viscosity:	
Dynamic:	Not determined.
Kinematic:	Not determined.
Molecular weight	Not applicable.
Other information	No further relevant information available.

*

10 Stability and reactivity

Thermal decomposition: No decomposition if used according to specifications.

Incompatible materials: No further relevant information available.

Hazardous decomposition products: Carbon monoxide and carbon dioxide

Additional information: See section 7 for information on handling, storage and conditions to be avoided.

*

11 Toxicological information

Acute toxicity:

May be fatal by ingestion, inhalation or skin absorption. Irritant. Onset of symptoms may be delayed 1-30 hours. Target
organs: heart, blood, central nervous system, liver, kidneys, spleen, eyes, skin, cardiovascular system, gastrointestinal system, respiratory system, lungs. 6000 ppm (METHANOL) is immediately dangerous to life or health.

LD/LC50 values relevant for classification:		
67-56-1 Methanol		
Oral	LD50	5628 mg/kg (rat)
Dermal	LD50	15800 mg/kg (rabbit)

Primary irritant effect:

on the skin: Harmful in contact with skin.

on the eye: No irritating effect.

Ingestion: Harmful if swallowed.

(Cont. on page 6)

Safety Data Sheet

Trade name: *Bituthene System 4000 Surface Conditioner or Perm-A-Barrier Surface Conditioner*

(Cont. from page 5)

Additional toxicological information:

Carcinogenic categories

IARC (International Agency for Research on Cancer) Human Carcinogenicity: **Group 1- Positive, Group 2A- Probable, Group 2B- Possible, Group 3- Not Classifiable**
None of the ingredients is listed.
NTP (National Toxicology Program) **K–Known to be carcinogenic, R–May reasonably be anticipated to be carcinogenic**
None of the ingredients is listed.
OSHA-Ca (Occupational Safety & Health Administration)
None of the ingredients is listed.

12 Ecological information

Aquatic toxicity: No further relevant information available.

Persistence and degradability No further relevant information available.

Behavior in environmental systems:

Bioaccumulative potential No further relevant information available.

Additional ecological information:

General notes:
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

*

13 Disposal considerations

Waste treatment methods Comply with Federal, State and local regulations.

Recommendation:



Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

Uncleaned packagings:

Recommendation: Disposal must be made according to official regulations.

*

14 Transport information

UN-Number **DOT, ADR, ADN, IMDG, IATA**	Not applicable.
UN proper shipping name **DOT, ADR, ADN, IMDG, IATA**	Not applicable.
Transport hazard class(es) **DOT, ADR, ADN, IMDG, IATA** **Class**	Not applicable.

(Cont. on page 7)

Safety Data Sheet

Trade name: *Bituthene System 4000 Surface Conditioner or Perm-A-Barrier Surface Conditioner*

(Cont. from page 6)

Packing group **DOT, ADR, IMDG, IATA**	Not applicable.
Environmental hazards: **Marine pollutant:**	No
Special precautions for user	Not applicable.
Transport/Additional information:	Not classified as a dangerous good for transport by road, rail or air.
DOT **Remarks:**	Not Regulated.
UN "Model Regulation":	-

*

15 Regulatory information

SARA (Superfund Amendments and Reauthorization Act)

Section 302/304 (extremely hazardous substances):

None of the ingredients is listed.

Section 313 Reportable Ingredients (Chemicals present below reporting threshold are exempt):

67-56-1	Methanol	3.6%

SARA Section 312/Tier I & II Hazard Categories:

Health Immediate (acute)	Yes
Health Delayed (chronic)	No
Flammable	No
Reactive	No
Pressure	No

North America Chemical Inventory Status

TSCA (Toxic Substances Control Act - United States):

All ingredients are listed or exempt from listing unless otherwise noted below.

CEPA (Canadian DSL):

All ingredients are listed or exempt from listing unless otherwise noted below.

Right to Know Ingredient Disclosure

25951-38-6	2-Propenoic acid, 2-methyl-, methyl ester, polymer with butyl 2-propenoate and 2-hydroxyethyl 2-propenoate
7732-18-5	Water

California Proposition 65

Chemicals known to cause cancer:

None of the ingredients is listed.

Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed.

Chemicals known to cause reproductive toxicity for males:

None of the ingredients is listed.

Chemicals known to cause developmental toxicity:

67-56-1	Methanol

(Cont. on page 8)

Safety Data Sheet

Trade name: *Bituthene System 4000 Surface Conditioner or Perm-A-Barrier Surface Conditioner*

(Cont. from page 7)

Carcinogenicity Categories

EPA (Environmental Protection Agency)
None of the ingredients is listed.

TLV-ACGIH (THE American Conference of Governmental Industrial Hygienists) **Human Carcinogen - A1 Confirmed, A2 Suspected, A3 Unknown Relevance, A4 Not Classifiable**
None of the ingredients is listed.

NIOSH-Cancer (National Institute for Occupational Safety and Health)
None of the ingredients is listed.

Volatile Organic Compounds (VOC) reported per the Emission Standards. 91 g/l

16 Other information

"The data included herein are presented in accordance with various environment, health and safety regulations. It is the responsibility of a recipient of the data to remain currently informed on chemical hazard information, to design and update its own program and to comply with all national, federal, state and local laws and regulations applicable to safety, occupational health, right-to-know and environmental protection."

Date of preparation / last revision 04/01/2015 / 1.1

The first date of preparation 03/29/2012

Number of revision times and the latest revision date 1.2 / 04/01/2015

Safety Data Sheet

Printing date 07/25/2016 **Version Number 1.1** **Reviewed on 07/25/2016**

*

1 Identification

Product identifier

Trade name: ***Bituthene Mastic***

SDS ID Number: 60026

Relevant identified uses of the substance or mixture, and uses advised against
Specialty construction product. Not intended for other uses

Details of the supplier of the safety data sheet

Manufacturer/Supplier:
GCP Applied Technologies
62 Whittemore Avenue
Cambridge, MA 02140 USA

GCP Canada, Inc.
294 Clements Road W.
Ajax, Ontario L1S 3C6 Canada

Information department:

Environmental Health & Safety
USA: +1-617-876-1400 (24 hours)
+1-800-354-5414 (8AM - 5PM) Not functional within Massachusetts
CAN: 1-905-683-8561 (24 hours)

Transport Emergency: Chemtrec +1-800-424-9300 (24 hours)

*

2 Hazard(s) identification

Classification of the substance or mixture

Flammable liquid and vapor.

Causes damage to organs through prolonged or repeated exposure. May cause damage to the central nervous system through prolonged or repeated exposure.

Label elements: The product is classified and labeled according to the Globally Harmonized System (GHS)

Hazard pictograms



GHS02 GHS08

Danger

Hazard statements
Flammable liquid and vapor.
Causes damage to organs through prolonged or repeated exposure. May cause damage to the central nervous system through prolonged or repeated exposure.
Precautionary statements
Keep away from heat/sparks/open flames/hot surfaces. No smoking.
Wear protective gloves / eye protection / face protection.
Keep container tightly closed.

(Cont. on page 2)

Safety Data Sheet

Trade name: *Bituthene Mastic*

(Cont. from page 1)

Take precautionary measures against static discharge.
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
Store in a well-ventilated place. Keep cool.

Hazard description: Flammable
NFPA ratings (scale 0 - 4)



Health = 3
Fire = 2
Reactivity = 0

HMIS-ratings (scale 0 - 4)



Health = *3
Flammability = 2
Reactivity = 0

Other hazards

Results of PBT and vPvB assessment

PBT: Not applicable.
vPvB: Not applicable.

*
3 Composition/information on ingredients

Chemical characterization: Mixtures

Description: Mixture of the substances listed below with additional nonhazardous ingredients.

Hazardous components:		
8052-42-4	Asphalt	50-100%
64742-95-6	Solvent naphtha (petroleum), light aromatic	25-30%
8052-41-3	Stoddard solvent	1.0-3.0%
9004-34-6	Cellulose	1.0-3.0%

Additional information: For the wording of the listed hazard phrases refer to section 16.

*
4 First-aid measures

Description of first aid measures

General information:

Get medical advice/attention if you feel unwell.

After inhalation:

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

After skin contact: Generally the product does not irritate the skin.

After eye contact: Rinse cautiously with water for several minutes.

After swallowing: If symptoms persist consult doctor.

Information for doctor:

Most important symptoms and effects, both acute and delayed No further relevant information available.

(Cont. on page 3)

Safety Data Sheet

Trade name: *Bituthene Mastic*

(Cont. from page 2)

Indication of any immediate medical attention and special treatment needed
No further relevant information available.

5 Fire-fighting measures

Extinguishing media

Suitable extinguishing agents: CO2, sand,extinguishing powder. Do not use water.

Special hazards arising from the substance or mixture No further relevant information available.

Additional information Collect contaminated fire fighting water separately. It must not enter the sewage system.

*

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

Wear protective equipment. Keep unprotected persons away.

Methods and material for containment and cleaning up:

Dispose contaminated material as waste according to section 13 of the SDS.

Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

7 Handling and storage

Handling:

Precautions for safe handling

Prevent formation of aerosols.
Flammable mixtures with air can be formed in emptied containers. Do not puncture, cut, drill, heat or weld uncleaned drums.

Avoid contact with skin.

Information about protection against explosions and fires:



Keep ignition sources away - Do not smoke.

Use only in explosion protected area.

Protect against electrostatic charges.

Use explosion-proof apparatus / fittings and spark-proof tools.

Empty containers may retain hazardous residue, both liquid and vapor.

(Cont. on page 4)

Safety Data Sheet

Trade name: *Bituthene Mastic*

(Cont. from page 3)

Conditions for safe storage, including any incompatibilities

Storage:

Further information about storage conditions: Keep receptacle tightly sealed.

Specific end use(s) No further relevant information available.

*

8 Exposure controls/personal protection

Additional information about design of technical systems: No further data; see item 7.

Control parameters

Components with limit values that require monitoring at the workplace:	
8052-42-4 Asphalt	
REL (USA)	Ceiling limit value: 5* mg/m³ *15-min; See Pocket Guide App. A
TLV (USA)	Long-term value: 0.5* mg/m³ *inh. fraction; as benzene-soluble aerosol; BEIp
8052-41-3 Stoddard solvent	
PEL (USA)	Long-term value: 2900 mg/m³, 500 ppm
REL (USA)	Long-term value: 350 mg/m³ Ceiling limit value: 1800* mg/m³ *15-min
TLV (USA)	Long-term value: 525 mg/m³, 100 ppm
9004-34-6 Cellulose	
PEL (USA)	Long-term value: 15* 5** mg/m³ *total dust **respirable fraction
REL (USA)	Long-term value: 10* 5** mg/m³ *total dust **respirable fraction
TLV (USA)	Long-term value: 10 mg/m³

Ingredients with biological limit values:	
8052-42-4 Asphalt	
BEI (USA)	- Medium: urine Time: end of shift at end of workweek Parameter: 1-Hydroxypyrene with hydrolysis (nonquantitative)

Additional information: The lists that were valid during the creation were used as basis.

Exposure controls

Personal protective equipment:

General protective and hygienic measures:

The usual precautionary measures for handling chemicals should be followed.

Breathing equipment:

Control exposure to ingredients with workplace control parameters if mentioned above. If no ingredients are listed, respiratory protection is generally not required.

If exposure limits are listed and may be exceeded, use approved respiratory protective equipment and filter type appropriate for the listed ingredients. (NIOSH, CEN, etc.).

Protection of hands: Protective gloves

(Cont. on page 5)

Safety Data Sheet

Trade name: *Bituthene Mastic*

(Cont. from page 4)

Material of gloves

Nitrile rubber.

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

Eye protection:



Safety glasses with side shield protection.



A face shield should also be worn if there is potential exposure to splash or spray.

Body protection:

Use personal protective equipment as required.

Take off contaminated clothing.

*

9 Physical and chemical properties

Information on basic physical and chemical properties

General Information	
Appearance:	
Form:	Liquid
Color:	Dark brown
Odor:	Petroleum-like
Odor threshold:	Not determined.
pH-value (~):	Not determined.
Change in condition	
Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	149 °C (300 °F)
Flash point:	40 °C (104 °F)
Flammability (solid, gaseous):	Not applicable.
Decomposition temperature:	Not determined.
Auto igniting:	Product is not selfigniting.
Danger of explosion:	In use, may form flammable/explosive vapor-air mixture.
Explosion limits:	
Lower:	Not determined.
Upper:	Not determined.
VOC Content (max):	See Section 15
Vapor pressure at 20 °C (68 °F):	10 hPa (8 mm Hg)
Density: (~) at 20 °C (68 °F)	1 g/cm³ (8.345 lbs/gal)
Relative density	Not determined.
Vapor density	Not determined.
Evaporation rate	Not determined.
Solubility in / Miscibility with	
Water:	Not miscible or difficult to mix.

(Cont. on page 6)

Safety Data Sheet

Trade name: *Bituthene Mastic*

(Cont. from page 5)

Partition coefficient (n-octanol/water):	Not determined.
Viscosity:	
Dynamic:	Not determined.
Kinematic:	Not determined.
Molecular weight	Not applicable.
Other information	No further relevant information available.

*

10 Stability and reactivity

Reactivity Stable under normal conditions.

Chemical stability

Thermal decomposition: No decomposition if used according to specifications.

Conditions to avoid No further relevant information available.

Incompatible materials: Strong oxidizers.

Hazardous decomposition products:

Carbon monoxide and carbon dioxide
Other potentially hazardous products may also be formed.

*

11 Toxicological information

Information on toxicological effects

Acute toxicity:

LD/LC50 values relevant for classification:		
64742-95-6 Solvent naphtha (petroleum), light aromatic		
Oral	LD50	>6800 mg/kg (rat)
Dermal	LD50	>3400 mg/kg (rabbit)
Inhalation	LC50, 4h	>10.2 mg/l (rat)

Primary irritant effect:

on the skin: No irritating effect expected

on the eye: No irritating effect expected

inhalation: No irritating effect expected

Additional toxicological information:

Carcinogenic categories

IARC (International Agency for Research on Cancer) Human Carcinogenicity: Group 1- Positive, Group 2A- Probable, Group 2B- Possible, Group 3- Not Classifiable		
8052-42-4	Asphalt	2B
9003-55-8	Styrene-butadiene rubber	3
12174-11-7	Clay	3

NTP (National Toxicology Program) K–Known to be carcinogenic, R–May reasonably be anticipated to be carcinogenic
None of the ingredients is listed.

(Cont. on page 7)

Safety Data Sheet

Trade name: *Bituthene Mastic*

(Cont. from page 6)

OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

*

12 Ecological information

Toxicity

Aquatic toxicity: No further relevant information available.

Fish toxicity
Solvent naptha (petroleum), light aromatic: 96 hr LC50 Oncorhynchus mykiss 9.22 mg/l.
Cellulose: 96 hr LC50 Fish (Piscis) 100.00 mg/l.
Water flea toxicity Solvent naptha (petroleum), light aromatic: 48 hr EC50 Daphnia magna, 6.14 mg/l.

Persistence and degradability No further relevant information available.

Behavior in environmental systems:

Bioaccumulative potential No further relevant information available.

Mobility in soil No further relevant information available.

Results of PBT and vPvB assessment

PBT: Not applicable.
vPvB: Not applicable.

Other adverse effects No further relevant information available.

*

13 Disposal considerations

Waste treatment methods

Recommendation:



Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

Uncleaned packagings:

Recommendation: Disposal must be made according to official regulations.

*

14 Transport information

UN-Number	
DOT	Non-bulk DOT shipments not regulated.
IMDG, IATA	UN1263
UN proper shipping name	
IMDG, IATA	PAINT

(Cont. on page 8)

Safety Data Sheet

Trade name: *Bituthene Mastic*

(Cont. from page 7)

Transport hazard class(es)

IMDG, IATA



Class 3 Flammable liquids
Label 3

Packing group
IMDG, IATA III

Environmental hazards:
Marine pollutant: No

Special precautions for user
Warning: Flammable liquids
Danger code (Kemler): 30
EMS Number: F-E,S-E
Stowage Category A

Transport/Additional information:

DOT
Remarks: Non-bulk DOT shipments not regulated.

IMDG
Limited quantities (LQ) 5L
Excepted quantities (EQ) Code: E1
Maximum net quantity per inner packaging: 30 ml
Maximum net quantity per outer packaging: 1000 ml

UN "Model Regulation": UN 1263 PAINT, 3, III, ENVIRONMENTALLY HAZARDOUS

*

15 Regulatory information

SARA (Superfund Amendments and Reauthorization Act)

Section 302/304 (extremely hazardous substances):
None of the ingredients is listed.

Section 313 Reportable Ingredients (Chemicals present below reporting threshold are exempt):
None of the ingredients is listed.

SARA Section 312/Tier I & II Hazard Categories:

Health Delayed (chronic)	Yes
Health Immediate (acute)	Yes
Reactive	No
Flammable	Yes
Pressure	No

North America Chemical Inventory Status

TSCA (Toxic Substances Control Act - United States):
All ingredients are listed or exempt from listing unless otherwise noted below.

CEPA (Canadian DSL):
All ingredients are listed or exempt from listing unless otherwise noted below.

Right to Know Ingredient Disclosure:

9003-55-8	Styrene-butadiene rubber

(Cont. on page 9)

Safety Data Sheet

Trade name: *Bituthene Mastic*

(Cont. from page 8)

12174-11-7	Clay
64742-16-1	Petroleum Hydrocarbon Resin

California Proposition 65

Chemicals known to cause cancer:

Clay

Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed.

Chemicals known to cause reproductive toxicity for males:

None of the ingredients is listed.

Chemicals known to cause developmental toxicity:

None of the ingredients is listed.

Carcinogenicity Categories

EPA (Environmental Protection Agency)

None of the ingredients is listed.

TLV-ACGIH (THE American Conference of Governmental Industrial Hygienists)
Human Carcinogen - A1 Confirmed, A2 Suspected, A3 Unknown Relevance, A4 Not Classifiable

Asphalt	A4

NIOSH-Cancer (National Institute for Occupational Safety and Health)

8052-42-4	Asphalt

Volatile Organic Compounds (VOC) reported per the Emission Standards. 225 g/L

*

16 Other information

The data included herein are presented in accordance with various environment, health and safety regulations. It is the responsibility of a recipient of the data to remain currently informed on chemical hazard information, to design and update its own program and to comply with all national, federal, state and local laws and regulations applicable to safety, occupational health, right-to-know and environmental protection.

Department issuing SDS:

GCP Applied Technologies
62 Whittemore Avenue
Cambridge, MA 02140 USA
USA: +1-617-876-1400 (24 hours)
+1-800-354-5414

Date of preparation / last revision 07/25/2016 / 1.0

The first date of preparation 03/03/2015

Number of revision times and the latest revision date 1.1 / 07/25/2016

HOHMANN & BARNARD, INC.
30 RASONS COURT – P.O. BOX 5270 – HAUPPAUGE, NY 11788
TEL: (631) 234-0600 FAX: (631) 234-0683
BRANCH OFFICES: ALABAMA – ILLINOIS – MARYLAND – TEXAS

RUBBER
MATERIAL SAFETY DATA SHEET

HAZARDS

313 Chemical
Irritant

PRODUCT IDENTIFICATION

CHEMICAL NAME:	Blended EPDM compound
CAS NUMBER:	N/A
CHEMICAL FAMILY:	Blended EPDM compound

HAZARDOUS INGREDIENTS

1. Zinc oxide	CAS# 1314-13-2	
2. Carbon black	CAS# 1333-86-4	
3. Phenolic Resin	CAS# Not Available	Probable Carcinogen

PHYSICAL DATA

APPEARANCE:	Amber, white or gray rubbery solid
SPECIFIC GRAVITY:	Varies by compound
MELTING POINT:	N/A
VAPOR PRESSURE:	N/A
BOILING POINT:	N/A
SOLUBILITY (H_2O):	Insoluble in water

FIRE AND EXPLOSION HAZARD DATA

FLASH POINT:	N/D
AUTOIGNITION: TEMPERATURE:	N/D
FLAMMABLE LIMITS IN AIR:	N/D
EXTINGUISHING MEDIA:	Water, protein foams, and ABC dry powder
SPECIAL FIRE FIGHTING PROCEDURES:	Positive-pressure self-contained breathing apparatus (SCBA) must be used. No personnel may expose himself to vapors or smoke without SCBA. Rubber is a Class A combustible that produces toxic combustion products.

REACTIVITY DATA

STABILITY:	Stable at ambient temperature and pressure
INCOMPATIBILITY:	None Known
HAZARDOUS POLYMERIZATION:	Will not occur
DECOMPOSITION PRODUCTS:	Combustion products include carbon monoxide, carbon dioxide, and small amounts of aromatic and aliphatic hydrocarbons. Smoke from all burning rubber must be considered toxic.

HOHMANN & BARNARD, INC.
30 RASONS COURT – P.O. BOX 5270 – HAUPPAUGE, NY 11788
TEL: (631) 234-0600 FAX: (631) 234-0683
BRANCH OFFICES: ALABAMA – ILLINOIS – MARYLAND – TEXAS

RUBBER
MATERIAL SAFETY DATA SHEET

HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE:	N/D
TOXIC LEVEL:	N/D
SPECIFIC HAZARD(S):	All rubber blends may emit processing vapors that are toxic. Good ventilation is needed. Prolonged and/or repeated contact with skin may cause irritation and inhalation of vapors during processing can irritate eyes and respiratory tract.
PRIMARY ROUTES OF ENTRY:	Inhalation of processing vapors
FIRST AID PROCEDURES:	Inhalation: Remove to fresh air. Skin Contact: Wash with soap and water.
TOXICOLOGY INFORMATION:	None generated on this material, but the components possess irritant potential. This product is not listed as carcinogenic by IARC, NTP or OSHA.

STORAGE, SPILL AND LEAK PROCEDURES

STORAGE:	Store away from sources of heat and light.
SPILLS:	Clean up in a manner consistent of good housekeeping. Handle as a solid waste. Do not flush into public sewer or water system.
DISPOSAL:	Dispose of in accordance with Federal, State and local regulations. This product is not defined as hazardous by current provisions of RCRA. (40CFR261)

SPECIAL PROTECTION INFORMATION

VENTILATION REQUIREMENTS:	Local exhaust ventilation is required for all processing operations.
PERSONAL PROTECTION :	Avoid skin contact by use of personal protective equipment and good personal hygiene. In absence of adequate ventilation for hot processing vapors and/or where particulate limits are exceeded, use NOISH-certified respiratory protection as required.

SPECIAL PRECAUTIONS

UNUSUAL HAZARDS:	Emits acrid vapors when exposed to flames. Toxic gases will form during combustion and/or degradation.
EXCESSIVE HEAT:	May ignite at excessive processing temperatures, and will produce toxic vapors during combustion and pyrolysis.
COMBUSTIBILITY:	Rubber is a Class A combustible. When this material burns or degrades toxic gases and vapors are liberated.

SAFETY DATA SHEET
Break Away Fast Penetrating Oil

Revision: 08/02/2017
Supersedes Revision: 06/23/2016

1. Product and Company Identification

Product Code: C10

Product Name: Break Away Fast Penetrating Oil

Company Name: CYCLO INDUSTRIES, INC.
902 SOUTH US HIGHWAY 1
JUPITER, FL 33477

Phone Number: (800)843-7813

Web site address: www.cyclo.com

Email address: ehs@cyclo.com

Emergency Contact: First Aid Emergency (800)752-7869
CHEMTREC (703) 527-3887 (800)424-9300

Information: First Aid Emergency (Outside U.S.) (312)906-6194

Intended Use: Penetrant

2. Hazards Identification

Flammable Aerosols, Category 1
Acute Toxicity: Inhalation, Category 4
Acute Toxicity: Oral, Category 4
Acute Toxicity: Skin, Category 4
Skin Corrosion/Irritation, Category 2
Serious Eye Damage/Eye Irritation, Category 2



GHS Signal Word: **Danger**

GHS Hazard Phrases:
H222: Extremely flammable aerosol.
H229: Pressurized container: may burst if heated.
H302: Harmful if swallowed.
H312: Harmful in contact with skin.
H315: Causes skin irritation.
H319: Causes serious eye irritation.
H332: Harmful if inhaled.

GHS Precaution Phrases:
P210: Keep away from heat/sparks/open flames/hot surfaces - No smoking.
P211: Do not spray on an open flame or any other ignition source.
P241: Use explosion-proof electrical/ventilating/lighting equipment.
P242: Use only non-sparking tools.
P243: Take precautionary measures against static discharge.
P251: Pressurized container: Do not pierce or burn even after use.
P261: Avoid breathing dust/fume/gas/mist/vapors/spray.
P270: Do not eat, drink or smoke when using this product.
P271: Use only outdoors or in a well-ventilated area.
P280: Wear protective gloves/protective clothing/eye protection/face protection.

GHS Response Phrases:
P301+330+331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P304+340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P303+361+353: IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower.
P363: Wash contaminated clothing before reuse.
P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P309+311: Call a POISON CENTER or doctor/physician if exposed or you feel unwell.

GHS Storage and Disposal Phrases:

P403+235: Store in cool/well-ventilated place.
P410+412: Protect from sunlight. Do not expose to temperatures exceeding 50 deg C/122 F.
P501: Dispose of contents/container in accordance with local/regional/national/international regulation.

Medical Conditions Generally Aggravated By Exposure: Repeated contact with skin may irritate pre-existing skin conditions.

3. Composition/Information on Ingredients

CAS #	Hazardous Components (Chemical Name)	Concentration
64742-52-5	Mineral oil, petroleum distillates, hydrotreated heavy naphthenic	50.0 -70.0 %
68476-86-8	Liquified petroleum gas, sweetened	20.0 -30.0 %
108-94-1	Cyclohexanone	1.0 -5.0 %

4. First Aid Measures

Emergency and First Aid Procedures:

If swallowed, do not induce vomiting. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In case of skin contact, wash with soap and large amounts of water. Remove contaminated clothing. If in eyes, rinse cautiously with water for several minutes, Remove contact lenses, if present and easy to do. Continue rinsing. Call physician immediately if adverse reaction occurs.

Signs and Symptoms Of Exposure:

Eyes: Contact with eyes may cause irritation, redness and pain. Causes moderate to severe eye irritation.

Skin: Prolonged or repeated contact can result in defatting and drying of the skin which may result in skin irritation and dermatitis (rash). Prolonged contact with liquid may cause slight temporary irritation.

Inhalation: Prolonged inhalation may be harmful. Inhaling large quantities of mist or vapor may cause some irritation to nose, throat and lungs. Avoid breathing mists from this product. Exposure to high doses may cause central nervous system depression (anesthetic-like effects). Doses which cause anesthetic-like effects may also cause adverse effects in liver, lungs and kidneys.

Ingestion: Ingestion is not considered to be a hazard encountered in normal industrial use. This material may be harmful or fatal if swallowed. Aspiration hazard. Low order of toxicity. May cause mild nausea and abdominal discomfort.

5. Fire Fighting Measures

Flammability Classification: NFPA Level 3 Aerosol

Flash Pt: -141.00 F (-96.1 C) Method Used: TAG Closed Cup

Explosive Limits: LEL: .7 UEL: 9.5

Autoignition Pt: No data.

Suitable Extinguishing Media: Foam, carbon dioxide, dry chemical, alcohol-resistant foam.

Fire Fighting Instructions: Containers can build up pressure if exposed to heat (fire). As in any fire, wear self-contained breathing apparatus pressure-demand (MSHA/NIOSH approved or equivalent) and full protective gear. Water runoff can cause environmental damage. Dike and collect water used to fight fire. Keep containers and surroundings cool with water spray. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulating in low areas.

Flammable Properties and Hazards: Vapors can travel to a source of ignition and flash back. Extremely flammable. Material will readily ignite at room temperatures in the presence of an ignition source. "Empty" containers retain product residue (liquid and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition; they may explode and cause injury or death. Contents under pressure. Containers may explode if exposed to high temperatures.

Hazardous Combustion Products: No data available.

6. Accidental Release Measures

Steps To Be Taken In Case Material Is Released Or Spilled: Use recommended personal protective equipment. Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container. Avoid runoff into storm sewers and ditches which lead to waterways.

7. Handling and Storage

Precautions To Be Taken in Handling: Keep away from heat/sparks/open flames/hot surfaces - No smoking. Keep container tightly closed. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools.
Take precautionary measures against static discharge. Pressurized container: Do not pierce or burn even after use. Avoid breathing dust/fume/gas/mist/vapors/spray. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection. Keep out of the reach of children.

Precautions To Be Taken in Storing: Store in cool/well-ventilated place. Protect from sunlight. Do not expose to temperatures exceeding 50 deg C/122 F.

8. Exposure Controls/Personal Protection

CAS #	Partial Chemical Name	OSHA TWA	ACGIH TWA	Other Limits
64742-52-5	Mineral oil, petroleum distillates, hydrotreated heavy naphthenic	No data.	No data.	No data.
68476-86-8	Liquified petroleum gas, sweetened	No data.	No data.	No data.
108-94-1	Cyclohexanone	PEL: 50 ppm	TLV: 20 ppm STEL: 50 ppm	No data.

Respiratory Equipment (Specify Type):	A NIOSH/MSHA approved air purifying respirator with an organic vapor cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air purifying respirators is limited. Use a positive pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection. A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.
Eye Protection:	Wear safety glasses with side shields or goggles when using this product.
Protective Gloves:	Gloves resistant to petroleum distillates should be worn.
Other Protective Clothing:	Wear impervious protective clothing, including boots, gloves, protective apron or coveralls to prevent skin contact.
Engineering Controls (Ventilation etc.):	Good general ventilation should be sufficient to control airborne levels. Local exhaust ventilation may be necessary to control any air contaminants to within their TLVs during the use of this product.
Work/Hygienic/Maintenance Practices:	Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Wash hands before eating. Remove contaminated clothing and wash before reuse. Use only in a well ventilated area. Follow all MSDS/label precautions even after container is emptied because they may retain product residues. Use spark-proof tools and explosion proof equipment. Avoid prolonged or repeated contact with skin. Avoid breathing vapors from heated material. Avoid contact with eyes, skin and clothing.

9. Physical and Chemical Properties

Physical States:	[ ] Gas [X] Liquid [ ] Solid
Appearance and Odor:	Light amber brown liquid with solvent odor.
pH:	No data.
Melting Point:	No data.
Boiling Point:	-94.00 C (-137.2 F)
Flash Pt:	-141.00 F (-96.1 C) Method Used: TAG Closed Cup
Evaporation Rate:	No data.
Flammability (solid, gas):	No data available.
Explosive Limits:	LEL: .7 UEL: 9.5
Vapor Pressure (vs. Air or mm Hg):	No data.
Vapor Density (vs. Air = 1):	No data.
Specific Gravity (Water = 1):	.820
Solubility in Water:	No data.
Octanol/Water Partition Coefficient:	No data.
Percent Volatile:	22.18 % by weight.
Autoignition Pt:	No data.
Decomposition Temperature:	No data.
Viscosity:	No data.

10. Stability and Reactivity

Stability: Unstable [ ] Stable [X]

Conditions To Avoid - Instability: Open flames and high temperatures. Contact with strong oxidizing agents. Avoid all sources of ignition, welding arcs and open flames. Keep product away from temperatures in excess of 120F (49C). Do not crush, puncture or incinerate container. Do not expose to direct sunlight or store where temperatures could exceed 120F.

Incompatibility - Materials To Avoid: Strong oxidizing agents. Strong bases.

Hazardous Decomposition or Byproducts: Carbon oxides; fumes.

Possibility of Hazardous Reactions: Will occur [ ] Will not occur [X]

Conditions To Avoid - Hazardous Reactions: No data available.

11. Toxicological Information

Toxicological Information: LD50: >5000 mg/kg

LC50: >4600 ppm
CAS# 64742-52-5:
Mutagenicity:, Mutation test: Mutation in microorganisms., 10.00 UL/PLAT, Bacteria - Salmonella typhimurium,.
Results:
Behavioral: Coma.
Biochemical:Metabolism (intermediary): Other.
- Cell Biology and Toxicology., Princeton Scientific Pub., Inc., 301 N. Harrison St., CN 5279, Princeton, NJ 08540, Vol/p/yr: 2,63, 1986

Acute toxicity, LD (Lethal dose), Oral, Rat, > 5.000 GM/KG.
Results:
Tumorigenic: Neoplastic by RTECS criteria.
Lungs, Thorax, or Respiration: Tumors.
Tumorigenic:Tumors at site of application.
- Acute Toxicity Data. Journal of the American College of Toxicology, Part B., Mary Ann Liebert, Inc., 1651 Third Ave., New York, NY 10128, Vol/p/yr: 1,133, 1990

Acute toxicity, LD (Lethal dose), Skin, Species: Rabbit, > 5.000 GM/KG.
Results:
Behavioral: Coma.
Biochemical:Metabolism (intermediary): Other.
- Acute Toxicity Data. Journal of the American College of Toxicology, Part B., Mary Ann Liebert, Inc., 1651 Third Ave., New York, NY 10128, Vol/p/yr: 1,133, 1990

Tumorigenic Effects:, TDLo, Skin, Mouse, 480.0 GM/KG, 80 W.
Results:
Tumorigenic: Neoplastic by RTECS criteria.
Skin and Appendages: Other: Tumors.
Tumorigenic:Tumors at site of application.
- United States Environmental Protection Agency, Office of Pesticides and Toxic Substances., U.S. Environmental Protection Agency, Office of Pesticides and Toxic Substances, 401 M St., SW, Washington, DC 20460, Vol/p/yr: 8EHQ-0887-,

Tumorigenic Effects:, TDLo, Skin, Mouse, 402.0 GM/KG, 78 W.
Results:
Tumorigenic: Equivocal tumorigenic agent by RTECS criteria.
Skin and Appendages: Other: Tumors.
Tumorigenic:Tumors at site of application.
- British Journal of Cancer., Macmillan Press Ltd, Houndmills, Basingstoke, Hampshire RG21 2XS UK, Vol/p/yr: 48,429, 1983

Tumorigenic Effects:, TDLo, Skin, Mouse, 398.0 GM/KG, 22 W.
Results:
Tumorigenic: Equivocal tumorigenic agent by RTECS criteria.
Skin and Appendages: Other: Tumors.
Tumorigenic:Tumors at site of application.
- British Journal of Cancer., Macmillan Press Ltd, Houndmills, Basingstoke, Hampshire RG21 2XS UK, Vol/p/yr: 48,429, 1983

Standard Draize Test, Skin, Species: Rabbit, 500.0 MG, Severe.
Results:
Tumorigenic: Equivocal tumorigenic agent by RTECS criteria.
Skin and Appendages: Other: Tumors.
Tumorigenic:Tumors at site of application.
- Acute Toxicity Data. Journal of the American College of Toxicology, Part B., Mary Ann Liebert, Inc., 1651 Third Ave., New York, NY 10128, Vol/p/yr: 1,133, 1990

CAS #	Hazardous Components (Chemical Name)	NTP	IARC	ACGIH	OSHA
64742-52-5	Mineral oil, petroleum distillates, hydrotreated heavy naphthenic	n.a.	n.a.	n.a.	n.a.
68476-86-8	Liquified petroleum gas, sweetened	n.a.	n.a.	n.a.	n.a.
108-94-1	Cyclohexanone	n.a.	3	A3	n.a.

12. Ecological Information

No data available.

13. Disposal Considerations

Waste Disposal Method: Dispose of contents/container in accordance with local/regional/national/international regulation.

14. Transport Information

LAND TRANSPORT (US DOT):

DOT Proper Shipping Name: Aerosols, Ltd. Qty.
DOT Hazard Class: 2.1 FLAMMABLE GAS
UN/NA Number: UN1950

MARINE TRANSPORT (IMDG/IMO):

IMDG/IMO Shipping Name: Aerosols, Ltd. Qty.
UN Number: 1950
Hazard Class: 2.1 - FLAMMABLE GAS
IMDG EMS Page:
Packing Group:
IMDG Classification: 2.1
IMDG MFAG Number:
Marine Pollutant: No

AIR TRANSPORT (ICAO/IATA):

ICAO/IATA Shipping Name: Aerosols, flammable, 2.1, Ltd. Qty.
UN Number: 1950
Hazard Class: 2.1 - FLAMMABLE GAS **IATA Classification:** 2.1

15. Regulatory Information

EPA SARA (Superfund Amendments and Reauthorization Act of 1986) Lists

CAS #	Hazardous Components (Chemical Name)	S. 302 (EHS)	S. 304 RQ	S. 313 (TRI)
64742-52-5	Mineral oil, petroleum distillates, hydrotreated heavy naphthenic	No	No	No
68476-86-8	Liquified petroleum gas, sweetened	No	No	No
108-94-1	Cyclohexanone	No	Yes 5000 LB	No

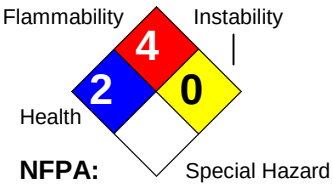
CAS #	Hazardous Components (Chemical Name)	Other US EPA or State Lists
64742-52-5	Mineral oil, petroleum distillates, hydrotreated heavy naphthenic	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No; CA TAC, Title 8: No; MA Oil/HazMat: No; MI CMR, Part 5: No; NC TAP: No; NJ EHS: No; NY Part 597: No; PA HSL: No; SC TAP: No; WI Air: No
68476-86-8	Liquified petroleum gas, sweetened	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No; CA TAC, Title 8: No; MA Oil/HazMat: No; MI CMR, Part 5: No; NC TAP: No; NJ EHS: No; NY Part 597: No; PA HSL: No; SC TAP: No; WI Air: No
108-94-1	Cyclohexanone	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No; CA TAC, Title 8: Title 8; MA Oil/HazMat: Yes; MI CMR, Part 5: Part 5; NC TAP: No; NJ EHS: No; NY Part 597: Yes; PA HSL: Yes - E; SC TAP: No; WI Air: Yes

CAS #	Hazardous Components (Chemical Name)	International Regulatory Lists
64742-52-5	Mineral oil, petroleum distillates, hydrotreated heavy naphthenic	Canadian DSL: Yes; Canadian NDSL: No; Taiwan TCSCA: Yes
68476-86-8	Liquified petroleum gas, sweetened	Canadian DSL: Yes; Canadian NDSL: No; Taiwan TCSCA: Yes
108-94-1	Cyclohexanone	Canadian DSL: Yes; Canadian NDSL: No; Taiwan TCSCA: Yes

16. Other Information

Revision Date: 08/02/2017

Hazard Rating System:



NFPA:

Additional Information About This Product: No data available.

Company Policy or Disclaimer: Cyclo Industries, Inc. provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. Individuals receiving this information must exercise their independent judgment in determining its appropriateness for a particular purpose. Cyclo Industries, Inc. makes no representations or warranties, either expressed or implied, of merchantability, fitness for a particular purpose with respect to the information set forth herein or to the product to which the information refers. Accordingly, Cyclo Industries, Inc. will not be responsible for damages resulting

from use of or reliance upon this information.

SAFETY DATA SHEET

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND THE COMPANY/UNDERTAKING

Product Identifier

Material Name: **BRICK**

Trade Name: Brick
Chemical Family: Predominately Aluminum Silicates
Formula: Mixture

Relevant Identified Uses of the Substance or Mixture and Uses Advised Against

Intended Use: Building material used for structural support.

Supplier of the Safety Data Sheet

Glen-Gery Corporation
1166 Spring Street
Wyomissing, PA 19610-6001
Product Support/Technical Services Phone: (610) 562-3076

Emergency telephone number:
Corporate Office: (610) 374-4011
Technical Services: (610) 562-3076
Contact E-Mail: GGTech@GlenGery.com

2. HAZARDS IDENTIFICATION

Appearance: Granular brick-shaped solid; comes in wide range of colors

Hazard Classification of the Substance or Mixture:

Skin irritation 2
Eye irritation 2A
Skin sensitization 1B
Carcinogenicity 1A
Specific target organ toxicity - Single exposure 3
Specific target organ toxicity - Repeated exposure 1

Signal Word: Danger

Hazard Statement: Brick dust may contain crystalline silica, a chemical that has been determined by certain agencies to cause cancer. See Section 11 for more information on health hazards.

Pictograms:



2. HAZARDS IDENTIFICATION

Precautionary Statements: Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves/protective clothing/eye protection/face protection. Use only outdoors or in a well-ventilated area. Do not breathe dust.

Response: If exposed or concerned: Get medical advice/attention. If skin irritation or rash occurs: Get medical advice/attention. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. If brick dust is inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell.

Storage: Not Applicable

Disposal: Dispose of unused or unwanted brick products in accordance with all local, regional, national and international regulations.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient	CAS Number	% Weight
Aluminum Silicates	Various	50 – 85
Quartz	14808-60-7	Varies
Chromium compounds	Various	0 – 3
Manganese compounds	Various	0 – 3
Iron Compounds as granular body additives	Various	0 – 3
Calcium compounds	Various	0 – 3

Additional Information: The above chemistries are provided for industrial hygiene and environmental purposes and are not intended to represent product specifications. This information has been compiled from data believed to be reliable. Elements such as aluminum, arsenic, boron, calcium, chromium, cobalt, copper, lead, molybdenum, nickel, tin, titanium, vanadium, and zirconium may be present in trace amounts. Brick products as shipped do not present an exposure hazard.

4. FIRST AID MEASURES

Description of First Aid Measures

Eye Contact: Flush with running water. Obtain medical assistance if irritation continues.

Skin Contact: Wash with soap and water. If an allergic reaction causes a rash that does not heal within a few days consult a physician. Treat abrasions as any other scrape or cut with disinfectants and bandages.

Ingestion: None (no known acute effects).

Inhalation: Remove from exposure to airborne particulates. Consult a physician if breathing does not return to normal.

Most Important Symptoms and Effects, Both Acute and Delayed

Symptoms and Effects of Exposure: For information on potential signs and symptoms of exposure, See Section 2 - Hazards Identification and/or Section 11 - Toxicological Information.

Medical Conditions Aggravated by Exposure: Excessive dust exposure may aggravate any existing respiratory disorders or diseases. Possible complications or allergies resulting in irritation to skin, eyes, and respiratory tract may occur from excessive exposure to dusts.

Recommendations for Immediate Medical Attention and Special Treatment Needed

Notes to Physician: Symptoms may not appear immediately.

Specific Treatments: In case of accident or if you feel unwell, seek medical advice immediately.

5. FIRE-FIGHTING MEASURES

Extinguishing Media: Not applicable

Special Hazards Arising from the Substance or Mixture

Hazardous Combustion Products: No data available

Fire / Explosion Hazards: Bricks as shipped do not pose a fire or explosion hazard.

Advice for Fire-Fighters

None

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions and Protective Equipment

Use personal protection recommended in Section 8.

Emergency Procedures

Not applicable.

Methods and Material for Containment and Cleaning Up

Not applicable.

Cleanup Procedures

Not applicable.

7. HANDLING AND STORAGE

Precautions for Safe Handling

Minimize dust generation and accumulation. Avoid breathing dust. Use wet methods, especially when cutting brick to reduce the generation of dust.

Conditions for Safe Storage, Including any Incompatibilities

Storage Conditions: Always stack and store bricks in a stable manner to avoid falling hazards.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Aluminum Silicates

OSHA PEL	15 mg/m^3
ACGIH TLV	10 mg/m^3

Quartz

OSHA PEL	10 / $\%SiO_2$ + 2 mg/m^3
ACGIH TLV	0.025 mg/m^3 (respirable)

Chromium Compounds

OSHA PEL	Not available
ACGIH TLV	Not available

Manganese Compounds

OSHA PEL	Not available
ACGIH TLV	Not available

Iron Compounds as granular body additives

OSHA PEL	Not available
ACGIH TLV	Not available

Calcium Compounds

OSHA PEL	Not available
ACGIH TLV	Not available

Exposure Controls

Engineering Controls:	Provide adequate ventilation to maintain exposures below the OSHA PEL and ACGIH TLV for quartz and other substances.
Personal Protective Equipment:	Refer to applicable national standards and regulations in the selection and use of personal protective equipment (PPE).
Feet:	Use of steel toe shoes is recommended when handling brick.
Eyes and Face:	Face shields should be used when sawing brick.
Skin:	Use gloves and or protective clothing if abrasions or allergic reactions are experienced.
Respiratory protection:	For airborne concentration exceeding the OSHA PEL or ACGIH TLV use a NIOSH and/or MSHA approved respirator.
Other:	Use of wet sawing methods is recommended anytime that bricks must be cut.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Granular solid	**Color:**	Bricks come in a wide range of colors
Odor:	Essentially odorless	**Odor Threshold:**	No data available
Molecular Formula:	Mixture	**Molecular Weight:**	Mixture

Solvent Solubility: No data available
Water Solubility: Negligible
pH: No data available.
Melting/Freezing Point (°C): No data available
Boiling Point (°C): No data available
Partition Coefficient: (Method, pH, Endpoint, Value)
No data available
Decomposition Temperature (°C): No data available.

Evaporation Rate (Gram/s): No data available
Vapor Pressure (kPa): No data available
Vapor Density (g/ml): No data available
Relative Density: No data available
Viscosity: No data available

Flammablity:

Autoignition Temperature (Solid) (°C):	No data available
Flammability (Solids):	No data available
Flash Point (Liquid) (°C):	No data available
Upper Explosive Limits (Liquid) (% by Vol.):	No data available
Lower Explosive Limits (Liquid) (% by Vol.):	No data available

10. STABILITY AND REACTIVITY

Reactivity: Bricks as shipped are not reactive
Chemical Stability: Stable under normal conditions of use
Possibility of Hazardous Reactions:
Oxidizing Properties: No data available
Incompatible Materials: No data available
Hazardous Decomposition Products: No data available

11. TOXICOLOGICAL INFORMATION

Effects of Short Term and Long Term Exposure:

Short Term
Bricks as shipped do not present an inhalation, ingestion or contact hazard. However, operations such as sawing and grinding may result in the following effects.

Eye: May cause irritation by abrasion with dust or chips.

11. TOXICOLOGICAL INFORMATION

Skin: Brick dust or chips may cause allergic reactions in hypersensitive individuals; May cause cuts and skin abrasions.

Inhalation: Brick dust or chips may cause congestion and irritation in nasal and respiratory passages.

Ingestion: No known acute effects.

Long Term
Excessive exposures to respirable particulates (dust) over an extended period of time may result in the development of pulmonary diseases such as silicosis.

Information on Toxicological Effects
General Information: Toxicological properties of the formulation have not been investigated. The information in this section describes the potential hazards of crystalline silica. Brick dust may contain crystalline silica, a chemical that has been determined by certain agencies to cause cancer and other chemicals known to cause cancer, birth defects and other reproductive harm. Inhalation of brick dust above established or recommended exposure levels should be avoided by use of wet sawing or shaping and/or use of a NIOSH and/or MSHA approved respirator.

Carcinogen Status: The following carcinogenicity classifications for crystalline silica have been established by the following agencies:

OSHA: Not regulated as a carcinogen

IARC: Group 1 carcinogenic in humans

NIOSH: Carcinogen, with no further categorization

NTP: Known carcinogen

12. ECOLOGICAL INFORMATION

There are no known environmental impacts. No ecological consideration when used according to directions.

13. DISPOSAL CONSIDERATIONS

Waste Treatment Methods: Dispose of waste in accordance with all applicable laws and regulations. State specific and Community specific provisions must be considered. It is recommended that waste minimization be practiced.

14. TRANSPORT INFORMATION

This material is not regulated for transportation as a hazardous material/dangerous good.

DOT: Bricks as shipped are not hazardous materials per DOT regulations.

15. REGULATORY INFORMATION

Safety, Health and Environmental Regulations/Legislation Specific for the Substance or Mixture

RCRA	Brick in its solid form is typically considered a non-hazardous waste for disposal, but local regulation may vary, therefore all waste must be disposed/recycled/reclaimed in accordance with federal, state, and local environmental control regulations. Water containing brick solids, such as from wet sawing operations, should also be disposed of in accordance with federal, state and local environmental regulation. Brick waste should not be used as a blasting agent.
EPCRA Section 311/312:	Bricks as shipped are not a Section 311/312 reportable product.
EPCRA Section 313:	Bricks as shipped are not subject to the Section 313, Toxic Chemical Release Inventory reporting requirements.
DOT:	Bricks as shipped are not hazardous materials per DOT regulations.
California Proposition 65:	This product contains crystalline silica, a substance known to the State of California to cause cancer. This product may contain trace amounts of heavy metals known to the State of California to cause cancer, birth defects, or other reproductive harm.

16. OTHER INFORMATION

Glen-Gery Corporation considers our product an “article” as defined in 30 CFR 1200(b)(g)(iv) and 40 CFR 372.38. As an article, an SDS is not required and the product is exempt from all other requirements of the hazard communication standard. OSHA requires an SDS for brick because it is occasionally dry sawed. We recommend only wet sawing of brick.

Data Sources:	The data contained in this SDS may have been gathered from confidential internal sources, raw material suppliers, or from the published literature.
Reasons for Revision:	Updated Technical Contact Email and company logo.
Prepared by:	The Glen-Gery Corporation

This SDS was prepared with information believed accurate at the time of preparation and was prepared and provided in good faith. However, the Glen-Gery Corporation assumes no responsibility as to the accuracy or suitability of such information and no warranty expressed or implied is made.

End of Safety Data Sheet

Safety Data Sheet

SECTION I - IDENTIFICATION

PRODUCT NAME: Brute Magic Cherry
PRODUCT CODE: 509000043-20AR, MSS Part No. 404398, 404398-6, 404398-12, 404398-24
PRODUCT USE: Lubricant
COMPANY NAME: Applied MSS
COMPANY ADDRESS: 14790 Foltz Parkway, Strongsville, OH 44149
COMPANY PHONE: 800-458-4018
EMERGENCY PHONE: 800-255-3924

SECTION II – HAZARDS IDENTIFICATION

CLASSIFICATION: Dissolved Gas
Skin Irritant: Category 2
Eye Irritant: Category 2A
Specific Target Organ Toxicity (Single Exposure): Category 3
Carcinogenicity: Category 1B
Aspiration Hazard: Category 1

HAZARD STATEMENT(S): DANGER: Contains gas under pressure; May explode if heated. Causes skin and serious eye irritation. May cause respiratory irritation, drowsiness or dizziness. May cause cancer. May be fatal if swallowed and enters airways.

This product contains the following percentage of chemicals of unknown toxicity**:** 0%

PRECAUTIONARY STATEMENTS: Keep away from heat, sparks, open flames, and hot surfaces. -No smoking. Do not spray on an open flame or other ignition source. Pressurized container: Do not pierce or burn, even after use. Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F. Store in a well-ventilated place. Wash hands thoroughly after handling. Wear protective gloves, eye protection, and protective clothing. If on skin: Wash with plenty of water. If skin irritation occurs: Get medical attention. Take off contaminated clothing and wash before reuse. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention. If swallowed: Immediately call a poison center or doctor. Do NOT induce vomiting. Dispose of contents and container in accordance with local, state, and national regulations. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. If exposed or concerned: Get medical attention. Avoid breathing fumes, mist, vapors, and spray. Use only outdoors or in a well-ventilated area. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center or doctor if you feel unwell.

SYMBOL:



HAZARDS NOT OTHERWISE CLASSIFIED: N/A

SECTION III – COMPOSITION/INFORMATION ON INGREDIENTS

HAZARDOUS INGREDIENT	CAS NUMBER	PERCENT
Carbon Dioxide	124-38-9	1-5%
Tetrachloroethylene	127-18-4	60-85%
Mineral Seal Oil	64741-44-2	5-10%

SECTION IV - FIRST AID MEASURES

EYES: Remove contact lenses. Flush with water for at least 15 minutes. See a physician if irritation persists.
INGESTION: Rinse mouth with water. Do not induce vomiting unless directed by medical authority. Seek medical attention.
INHALATION: Move to fresh air. If breathing is difficult, administer oxygen. Seek immediate medical attention.
SKIN: Immediately wash with soap and water for 15 minutes. Remove contaminated clothing and shoes immediately. Seek medical attention if irritation persists.
ACUTE HEALTH HAZARDS: Eyes: redness, tearing, blurred vision

Skin: defatting and dermatitis
Inhalation: Anesthetic, irritation, Central Nervous System depression
Oral: abdominal irritation, nausea, vomiting, and diarrhea. Aspiration risk.

CHRONIC HEALTH HAZARDS: Possible cancer causing agent and overexposure may also include damage to skin, kidneys, liver, lungs, blood, or central nervous systems. May cause dizziness, headache, nausea, mental confusion, or visual disturbances.

NOTE TO PHYSICIAN: Do not administer adrenaline or epinephrine to a victim of chlorinated solvent poisoning. This product contains ingredients that may be anticipated to be a carcinogen.

SECTION V – FIRE-FIGHTING MEASURES

EXTINGUISHING MEDIA: Dry chemical, foam, or Carbon Dioxide (CO_2).

UNSUITABLE EXTINGUISHING MEDIA: Water spray/stream.

SPECIAL FIRE FIGHTING PROCEDURES: Wear NIOSH approved Self Contained Breathing Apparatus with a full face piece operated in a positive pressure demand mode with full body protective clothing when fighting fires. Use water spray only to cool exposed containers.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Contents under pressure. Exposure to temperatures above 120°F may cause bursting.

HAZARDOUS COMBUSTION PRODUCTS: Oxides of carbon, chlorine, hydrogen chloride and phosgene.

SECTION VI – ACCIDENTAL RELEASE MEASURES

PERSONAL PROTECTIVE EQUIPMENT: Refer to section VIII for proper Personal Protective Equipment.

SPILL: Use absorbent on spill, sweep to clean. Dispose in accordance with local, state and federal laws. Small releases may be wiped up with wiping material.

WASTE DISPOSAL: Dispose of in accordance with federal, state, and local regulations. Do not dump in sewers. Wrap container and place in trash collection, do not puncture, incinerate, or reuse container.

RCRA STATUS: Waste solvent likely considered U210 (Tetrachloroethylene) under RCRA, however product should be fully characterized prior to disposal (40 CFR 261).

SECTION VII – HANDLING AND STORAGE

HANDLING AND STORAGE: Pressurized container: Do not pierce or burn, even after use. Protect from sunlight. Store in a well ventilated place. Do not expose to temperatures exceeding 50°C/122°F.

OTHER PRECAUTIONS: Keep out of the reach of children.

INCOMPATIBILITY: Strong acids, strong alkalis, strong oxidizing agents, chemically active metals, such as aluminum, barium, lithium, sodium, magnesium, potassium, titanium, beryllium, concentrated nitric acid some plastics, rubbers, and coatings.

SECTION VIII – EXPOSURE CONTROLS/PERSONAL PROTECTION

HAZARDOUS INGREDIENT	OSHA PEL	ACGIH TLV
Carbon Dioxide	5000 ppm	5000 ppm
Tetrachloroethylene	100 ppm	25 ppm
Mineral Seal Oil	5 mg/m3	200 mg/m3

ENGINEERING CONTROLS / VENTILATION: Material is heavier than air. Material may concentrate in low lying areas. Normal, forced ventilation required to meet TLV requirements. Local exhaust ventilation is generally preferred.

RESPIRATORY PROTECTION: Wear NIOSH/MSHA approved organic vapor respiratory protection if used in confined, poorly ventilated areas.

PERSONAL PROTECTIVE EQUIPMENT: Safety glasses, gloves, and synthetic apron.

ADDITIONAL MEASURES: Wash hands thoroughly after handling.

SECTION IX - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Clear, Yellow Aerosol Spray

ODOR: Chlorinated solvent odor

ODOR THRESHOLD: N/D

BOILING POINT: >188°F (87°C)

FREEZING POINT: N/D
FLAMMABILITY: Not considered a flammable aerosol or an extremely flammable aerosol by OSHA (29CFR 1910.1200)
FLASH POINT: N/D
AUTOIGNITION TEMPERATURE: N/D
LOWER FLAMMABILITY LIMIT: N/D
UPPER FLAMMABILITY LIMIT: N/D
VAPOR PRESSURE (mm Hg): N/D
VAPOR DENSITY (AIR=1): N/D
EVAPORATION RATE: N/D
SPECIFIC GRAVITY (H2O=1): 1.40 - 1.55 @ 77°F (25°C)
pH: N/A
SOLUBILITY IN WATER: 0%
PARTITION COEFFICIENT: n-OCTANOL/WATER (K_{OW}): N/D
VOLATILE ORGANIC COMPOUNDS (VOC): 0%
DECOMPOSITION TEMPERATURE: N/D
VISCOSITY: N/D

SECTION X – STABILITY AND REACTIVITY DATA

REACTIVITY: Chemically active metals and bases.
CHEMICAL STABILITY: Stable
CONDITIONS TO AVOID: Temperatures greater than 122°F may cause bursting.
INCOMPATIBILITY: Strong acids, strong alkalis, strong oxidizing agents, chemically active metals, such as aluminum, barium, lithium, sodium, magnesium, potassium, titanium, beryllium, concentrated nitric acid some plastics, rubbers, and coatings.
HAZARDOUS DECOMPOSITION OR BY-PRODUCT: Oxides of carbon, chlorine, hydrogen chloride and phosgene.
POSSIBLE HAZARDOUS REACTIONS: None Known

SECTION XI – TOXICOLOGICAL INFORMATION

TOXICOLOGICAL INFORMATION: **Tetrachloroethylene** (127-18-4) LD_{50} (Oral, Rat) 2629 mg/kg; LC_{50} (Inhalation, Mouse, 6hr) 4100 ppm **Mineral Seal Oil** (64741-44-2) LD_{50} (Oral, Rat) 5000 mg/kg; LD_{50} (Dermal, Rabbit) 2000 mg/kg
ROUTES OF ENTRY: Eyes, Ingestion, Inhalation, Skin
EYES: Causes severe irritation, redness, tearing, pain, visual disturbance, may cause eye damage.
INGESTION: Causes gastrointestinal irritation, headaches, nausea, diarrhea, vomitting, abdominal cramps.
INHALATION: Irritation to respiratory tract, dizziness, headache, nausea, depression of central nervous system, prolonged exposure may cause unconsciousness, heart effects, liver effects, kidney effects, and death.
SKIN: Irritation likely, redness and pain. May cause localized defatting, blistering with prolonged skin contact. May be absorbed through the skin.
MEDICAL CONDITION AGGRAVATED: Excessive exposure will aggravate pre-existing disorders of eyes, skin, respiratory, liver, kidney, cardiovascular system, pulmonary illnesses, or central nervous system.
ACUTE HEALTH HAZARDS: Eyes: redness, tearing, blurred vision
Skin: defatting and dermatitis
Inhalation: Anesthetic, irritation, Central Nervous System depression
Oral: abdominal irritation, nausea, vomiting, and diarrhea. Aspiration risk.
CHRONIC HEALTH HAZARDS: Possible cancer causing agent and overexposure may also include damage to skin, kidneys, liver, lungs, blood, or central nervous systems. May cause dizziness, headache, nausea, mental confusion, or visual disturbances.
CARCINOGENICITY: **OSHA:** Yes **ACGIH:** A2 - Suspected **NTP:** 2 - Anticipated
IARC: 2A - Probable **OTHER:** CA Prop 65

SECTION XII – ECOLOGICAL INFORMATION

ECOLOGICAL INFORMATION: Not Established
BIODEGRADABILITY: Component or components of this product are not biodegradable.
BIOACCUMULATION: Components in this mixture can bioaccumulate in aquatic organisms.
SOIL MOBILITY: This product is mobile in soil.
OTHER ECOLOGICAL HAZARDS: This material is toxic to aquatic life.

SECTION XIII – DISPOSAL CONSIDERATIONS

WASTE DISPOSAL: Dispose of in accordance with federal, state, and local regulations. Do not dump in sewers. Wrap container and place in trash collection, do not puncture, incinerate, or reuse container.

RCRA STATUS: Waste solvent likely considered U210 (Tetrachloroethylene) under RCRA, however product should be fully characterized prior to disposal (40 CFR 261).

SECTION XIV - TRANSPORTATION INFORMATION

PROPER SHIPPING NAME: Aerosols, Ltd. Qty.
HAZARD CLASS/DIVISION: 2.2 (6.1)
UN/NA NUMBER: UN 1950
PACKAGING GROUP: N/A

AIR SHIPMENT
PROPER SHIPPING NAME: Aerosols, Non-Flammable, Toxic, Containing Substances in Division 6.1 Packaging Group III
HAZARD CLASS/DIVISION: 2.2 (6.1)
UN/NA NUMBER: UN 1950
PACKAGING GROUP: N/A

SHIPPING BY WATER:
VESSEL (IMO/IMDG)
PROPER SHIPPING NAME: Aerosols, Toxic
HAZARD CLASS/DIVISION: 2.2 (6.1)
UN/NA NUMBER: UN 1950
PACKAGING GROUP: N/A
ENVIRONMENTAL HAZARDS WATER: Marine Pollutant

SECTION XV - REGULATORY INFORMATION

TSCA STATUS: All Chemicals are listed or exempt.
CERCLA (COMPREHENSIVE RESPONSE COMPENSATION, AND LIABILITY ACT): Tetrachloroethylene (127-18-4) Reportable Quantity = 100 lbs **Trichloroethylene** (79-01-6) Reportable Quantity = 100 lbs
SARA 311/312 HAZARD CATEGORIES: Acute Health, Chronic Health.
SARA 313 REPORTABLE INGREDIENTS: Tetrachloroethylene (127-18-4)
STATE REGULATIONS: Tetrachloroethylene (127-18-4) **CA Prop 65:** Chemical known to the state of California to cause cancer.

NFPA HEALTH:	2	**HMIS HEALTH:**	2
NFPA FLAMMABILITY:	1	**HMIS FLAMMABILITY:**	1
NFPA REACTIVITY:	0	**HMIS REACTIVITY:**	0
NFPA OTHER:	None	**HMIS PROTECTION:**	C

SECTION XVI - ADDTIONAL INFORMATION

PREPARATION BY: Chioma Agbai
DATE PREPARED: 12/13/2013
REVISION DATE: 06/20/2017

N/A = Not Applicable; N/D = Not Determined

DISCLAIMER: To the best of our knowledge, information contained herein is accurate. However there is no assumption of liability for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazard which exists. The information contained in this SDS was obtained from current and reliable sources; however, the data is provided without any warranty, expressed or implied, regarding its correctness or accuracy. Since the conditions or handling, storage and disposal of this product are beyond the control of the manufacturer, the manufacturer will not be responsible for loss, injury, or expense arising out of the products improper use. No warranty, expressed or inferred, regarding the product described in this SDS shall be created or inferred by any statement in this SDS. Various government

agencies may have specific regulations regarding the transportation, handling, storage, use, or disposal of this product which may not be covered by this SDS. The user is responsible for full compliance.

Section 1 - PRODUCT AND COMPANY IDENTIFICATION

Material Name
CCW-704

Synonyms
Solvent-based rubberized bitumen mastic

Chemical Family
Mastic

Product Use
Detailing mastic for use with waterproofing membrane

Restrictions on Use
For industrial use only.

Manufacturer Information

Carlisle Coatings and Waterproofing, Inc.
900 Hensley Lane
Wylie, TX 75098
www.carlisleccw.com

Phone Numbers:

Medical Emergency
CHEMTREC (USA): 800-424-9300

MSDS Assistance; 972-442-6545
Technical Assistance: 888-229-2199
Customer Service: 888-229-0199

Section 2 - HAZARDS IDENTIFICATION

Classification in accordance with paragraph (d) of 29 CFR 1910.1200.
Flammable Liquids - Category 3
Skin Corrosion/Irritation - Category 2
Carcinogenicity - Category 2
Reproductive Toxicity - Category 1B
Specific Target Organ Toxicity - Single Exposure - Category 2 (liver, kidneys, thymus)
Specific Target Organ Toxicity - Single Exposure - Category 3

GHS Label Elements

Symbol(s)



Signal Word
Danger

Hazard Statement(s)
Flammable liquid and vapor
Causes skin irritation
Suspected of causing cancer
May damage fertility or the unborn child
May cause damage to organs
May cause respiratory irritation. May cause drowsiness or dizziness

Precautionary Statement(s)

Prevention
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Keep container tightly closed
Keep away from heat/sparks/open flame/hot surfaces - No smoking
Ground/Bond container and receiving equipment
Use explosion-proof electrical/ventilating/lighting equipment
Take precautionary measures against static discharge
Use only non-sparking tools
Use only outdoors or in a well-ventilated area
Wear protective gloves/protective clothing/eye protection/face protection
Do not breathe dust/fume/gas/mist/vapours/spray
Wash thoroughly after handling
Do not eat, drink or smoke when using this product

Response
In case of fire: Use appropriate media to extinguish
If exposed or concerned: Call a POISON CENTER or doctor/physician
IF INHALED: Remove person to fresh air and keep at rest in a position comfortable for breathing
Call a POISON CENTER or doctor if you feel unwell
IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower
If skin irritation occurs: Get medical advice/attention
Take off contaminated clothing and wash before reuse
Specific treatment (see label)

Storage
Store in a well-ventilated place. Keep container tightly closed
Keep cool
Store locked up

Disposal
Dispose of contents/container in accordance with local/regional/national/international regulations

Other Hazards
No additional information available.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

CAS	Component Name	Percent
8052-42-4	Asphalt	0-45
64742-93-4	Asphalt, oxidized	0-45
68955-27-1	Distillates, petroleum, petroleum residues vacuum	0-45
64741-56-6	Residues, petroleum, vacuum	0-45
64742-95-6	Solvent naphtha, petroleum, light aromatic	10-30
98-82-8	Cumene	0.1-1
95-63-6	Benzene, 1,2,4-trimethyl-	3-7
1330-20-7	Xylenes (o-, m-, p- isomers)	0.1-1
1317-65-3	Limestone	10-30
14808-60-7	Silica, crystalline	0.1-1
68953-58-2	Quaternary ammonium compounds, bis(hydrogenated tallow alkyl)dimethyl, salts with bentonite	5-10

Section 4 - FIRST AID MEASURES

Description of Necessary Measures
If exposed or concerned: Call a POISON CENTER or doctor/physician.

Inhalation
Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

Skin
Wash exposed skin with soap and water. Take off contaminated clothing and wash before reuse. If skin irritation occurs, get medical advice/attention.

Eyes
Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical advice/attention.

Ingestion
Rinse mouth. Do NOT induce vomiting. Call a POISON CENTER or doctor if you feel unwell.

Indication of any immediate medical attention and special treatment needed
Treat symptomatically and supportively.

Most Important Symptoms/Effects

Acute
Causes skin irritation. May cause damage to the kidneys, liver, thymus. May cause respiratory irritation. May cause drowsiness or dizziness.

Delayed
Suspected of causing cancer. May damage fertility or the unborn child.

Note to Physicians
Contains ASPHALT.

Section 5 - FIRE FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media
Use carbon dioxide, regular dry chemical, regular foam or water.

Unsuitable Extinguishing Media
None known.

Special Hazards Arising from the Chemical
Flammable liquid and vapor. Vapors are heavier than air and may travel a considerable distance to a source of ignition and flashback.

Hazardous Combustion Products
Oxides of carbon, hydrocarbons

Fire Fighting Measures
Ground/Bond container and receiving equipment. Take precautionary measures against static discharge. Avoid inhalation of material or combustion by-products.

Special Protective Equipment and Precautions for Firefighters
Wear full protective fire fighting gear including self contained breathing apparatus (SCBA) for protection against possible exposure.

Section 6 - ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures
Wear personal protective clothing and equipment, see Section 8.

Methods and Materials for Containment and Cleaning Up
Remove all sources of ignition. Avoid inhalation of material or combustion by-products. Ventilate affected area. Absorb with earth, sand or other non-combustible material and transfer to container. Dispose in accordance with all applicable regulations.

Environmental Precautions
Avoid release to the environment.

Section 7 - HANDLING AND STORAGE

Precautions for Safe Handling
Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep container tightly closed. Keep away from heat/sparks/open flame/hot surfaces - No smoking. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Take precautionary measures against static discharge. Use only non-sparking tools. Use only outdoors or in a well-ventilated area. Avoid contact with eyes, skin and clothing. Wear protective gloves/protective clothing/eye protection/face protection. Do not breathe dust/fume/gas/mist/vapours/spray. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. KEEP OUT OF REACH OF CHILDREN.

Conditions for Safe Storage, Including any Incompatibilities
Store in a well-ventilated place. Keep container tightly closed
Keep cool
Store locked up
Store below 100 F. Keep away from heat and ignition sources. Keep away from incompatible materials. Do not cut, puncture, or weld on or near this container.

Incompatible Materials
Strong oxidizing agents

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Component Exposure Limits

Asphalt	8052-42-4	
ACGIH:	0.5 mg/m^3 TWA as benzene soluble aerosol fume, inhalable fraction	
NIOSH:	5 mg/m^3 Ceiling fume 15 min	
Mexico:	5 mg/m^3 TWA LMPE-PPT	10 mg/m^3 STEL [LMPE-CT]
Hydrogen sulfide	7783-06-4	
ACGIH:	1 ppm TWA	5 ppm STEL
NIOSH:	10 ppm Ceiling 10 min; 15 mg/m^3 Ceiling 10 min	
	100 ppm IDLH	
Europe:	5 ppm TWA; 7 mg/m^3 TWA	10 ppm STEL; 14 mg/m^3 STEL

OSHA (US):	20 ppm Ceiling	
Mexico:	10 ppm TWA LMPE-PPT; 14 mg/m^3 TWA LMPE-PPT	
	15 ppm STEL [LMPE-CT]; 21 mg/m^3 STEL [LMPE-CT]	
Cumene	98-82-8	
ACGIH:	50 ppm TWA	
NIOSH:	50 ppm TWA; 245 mg/m^3 TWA	900 ppm IDLH (10% LEL)
	Potential for dermal absorption	
Europe:	20 ppm TWA; 100 mg/m^3 TWA	50 ppm STEL; 250 mg/m^3 STEL
	Possibility of significant uptake through the skin	
OSHA (US):	50 ppm TWA; 245 mg/m^3 TWA	
	prevent or reduce skin absorption	
Mexico:	50 ppm TWA LMPE-PPT; 245 mg/m^3 TWA LMPE-PPT	
	75 ppm STEL [LMPE-CT]; 365 mg/m^3 STEL [LMPE-CT]	
	Skin - potential for cutaneous absorption	
Benzene, 1,2,4-trimethyl-	95-63-6	
NIOSH:	25 ppm TWA; 125 mg/m^3 TWA	
Europe:	20 ppm TWA; 100 mg/m^3 TWA	
Xylenes (o-, m-, p- isomers)	1330-20-7	
ACGIH:	100 ppm TWA	150 ppm STEL
Europe:	50 ppm TWA (pure); 221 mg/m^3 TWA (pure)	
	Possibility of significant uptake through the skin	
	100 ppm STEL (pure); 442 mg/m^3 STEL (pure)	
OSHA (US):	100 ppm TWA; 435 mg/m^3 TWA	
Mexico:	100 ppm TWA LMPE-PPT; 435 mg/m^3 TWA LMPE-PPT	
	150 ppm STEL [LMPE-CT]; 655 mg/m^3 STEL [LMPE-CT]	

Limestone	1317-65-3	
NIOSH:	10 mg/m^3 TWA total dust; 5 mg/m^3 TWA respirable dust	
OSHA (US):	15 mg/m^3 TWA total dust; 5 mg/m^3 TWA respirable fraction	
Mexico:	10 mg/m^3 TWA LMPE-PPT	20 mg/m^3 STEL [LMPE-CT]
Silica, crystalline	14808-60-7	
ACGIH:	0.025 mg/m^3 TWA respirable fraction	
NIOSH:	0.05 mg/m^3 TWA respirable dust	50 mg/m^3 IDLH respirable dust
OSHA (US):	((30)/(%SiO2 + 2) mg/m^3 TWA) total dust; ((250)/(%SiO2 + 5) mppcf TWA) respirable fraction; ((10)/(%SiO2 + 2) mg/m^3 TWA) respirable fraction	
Mexico:	0.1 mg/m^3 TWA LMPE-PPT respirable fraction	

Biological limit value
There are no biological limit values for any of this product's components.

Engineering Controls
Provide adequate ventilation. Ensure compliance with applicable exposure limits.

Individual Protection Measures, such as Personal Protective Equipment

Eye/face protection
Wear safety glasses or safety goggles, with a faceshield, as appropriate.

Skin Protection
Wear chemical resistant clothing and rubber boots when potential for contact with the material exists.

Respiratory Protection
A NIOSH approved air-purifying respirator with an appropriate cartridge or canister may be appropriate under certain circumstances where airborne concentrations are expected to exceed exposure limits.

Glove Recommendations
Wear appropriate chemical resistant gloves.

Protective Materials
Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Black paste	**Physical State**	liquid
Odor	Petroleum	**Color**	Black
Odor Threshold	Not available	**pH**	Not available

Melting Point	Not available	**Boiling Point**	308 - 355 °F
Freezing point	Not available	**Evaporation Rate**	10 - 20 % volatile
Boiling Point Range	Not available	**Flammability (solid, gas)**	Not available
Autoignition	Not available	**Flash Point**	108 °F
Lower Explosive Limit	1.9 %	**Decomposition**	Not available
Upper Explosive Limit	12.6 %	**Vapor Pressure**	3 mmHg
Vapor Density (air=1)	4.2	**Specific Gravity (water=1)**	Not available
Water Solubility	Negligible	**Partition coefficient: n-octanol/water**	Not available
Viscosity	Not available	**Solubility (Other)**	Not available
Density	1.24 (relative)	**VOC**	200 g/L

Other Information
No additional information available.

Section 10 - STABILITY AND REACTIVITY

Reactivity
No reactivity hazard is expected.

Chemical Stability
Stable under normal conditions of use.

Possibility of Hazardous Reactions
Hazardous polymerization will not occur.

Conditions to Avoid
Avoid heat, flames, sparks and other sources of ignition. Avoid contact with incompatible materials.

Incompatible Materials
Strong oxidizing agents

Hazardous decomposition products
Oxides of carbon, hydrocarbons

Section 11 - TOXICOLOGICAL INFORMATION

Information on Likely Routes of Exposure

Inhalation
May cause respiratory irritation. May cause drowsiness or dizziness.

Skin Contact
Causes skin irritation.

Eye Contact
May cause mild eye irritation.

Ingestion
May be harmful if swallowed.

Acute and Chronic Toxicity

Component Analysis - LD50/LC50
The components of this material have been reviewed in various sources and the following selected endpoints are published:
Asphalt (8052-42-4)
Oral LD50 Rat >5000 mg/kg
Dermal LD50 Rabbit >2000 mg/kg
Asphalt, oxidized (64742-93-4)
Oral LD50 Rat >5000 mg/kg
Dermal LD50 Rabbit >2000 mg/kg
Distillates, petroleum, petroleum residues vacuum (68955-27-1)
Oral LD50 Rat 4320 mg/kg
Dermal LD50 Rabbit >2000 mg/kg
Residues, petroleum, vacuum (64741-56-6)
Oral LD50 Rat 4320 mg/kg
Dermal LD50 Rabbit >2000 mg/kg
Hydrogen sulfide (7783-06-4)
Inhalation LC50 Rat 0.99 mg/L 1 h
Solvent naphtha, petroleum, light aromatic (64742-95-6)
Oral LD50 >3000 mg/kg
Dermal LD50 >3160 mg/kg
Inhalation LC50 Rat 3400 ppm 4 h
Cumene (98-82-8)
Oral LD50 Rat 1400 mg/kg
Dermal LD50 Rabbit 12300 µL/kg
Inhalation LC50 Rat >3577 ppm 6 h
Benzene, 1,2,4-trimethyl- (95-63-6)
Oral LD50 Rat 3280 mg/kg
Dermal LD50 Rabbit >3160 mg/kg
Inhalation LC50 Rat 18 g/m3 4 h
Xylenes (o-, m-, p- isomers) (1330-20-7)
Oral LD50 Rat 3500 mg/kg
Dermal LD50 Rabbit >4350 mg/kg
Inhalation LC50 Rat 29.08 mg/L 4 h
Limestone (1317-65-3)
Oral LD50 Rat 6450 mg/kg
Silica, crystalline (14808-60-7)
Oral LD50 Rat 500 mg/kg
Quaternary ammonium compounds, bis(hydrogenated tallow alkyl)dimethyl, salts with bentonite (68953-58-2)
Oral LD50 Rat >5000 mg/kg
Inhalation LC50 Rat >12.6 mg/L 4 h

Immediate Effects
Causes skin irritation. May cause damage to the kidneys, liver, thymus. May cause respiratory irritation. May cause drowsiness or dizziness.

Delayed Effects
Suspected of causing cancer. May damage fertility or the unborn child.

Irritation/Corrosivity Data
Causes skin irritation. May cause respiratory irritation. May cause mild eye irritation.

Respiratory Sensitization
No data available.

Dermal Sensitization
No data available.

Component Carcinogenicity

Asphalt	8052-42-4
ACGIH:	A4 - Not Classifiable as a Human Carcinogen (fume, coal tar-free)
IARC:	Monograph 103 [2013]; Supplement 7 [1987] (extracts of steam-refined and air-refined); Monograph 35 [1985] (Group 2B (possibly carcinogenic to humans))
DFG:	Category 2 (considered to be carcinogenic for man, aerosol and vapor)
OSHA:	Present
Asphalt, oxidized	64742-93-4
IARC:	Monograph 103 [2013] (and their emissions during roofing) (Group 2A (probably carcinogenic to humans))
OSHA:	Present
Residues, petroleum, vacuum	64741-56-6
IARC:	Monograph 103 [2013] (Group 2B (possibly carcinogenic to humans))
OSHA:	Present
Polycyclic aromatic hydrocarbons	130498-29-2
NTP:	Reasonably Anticipated To Be A Human Carcinogen
OSHA:	Present

Cumene	98-82-8
IARC:	Monograph 101 [2012] (Group 2B (possibly carcinogenic to humans))
NTP:	Reasonably Anticipated To Be A Human Carcinogen
DFG:	Category 3B (could be carcinogenic for man)
OSHA:	Present
Xylenes (o-, m-, p-isomers)	1330-20-7
ACGIH:	A4 - Not Classifiable as a Human Carcinogen
IARC:	Monograph 71 [1999]; Monograph 47 [1989] (Group 3 (not classifiable))
Silica, crystalline	14808-60-7
ACGIH:	A2 - Suspected Human Carcinogen
IARC:	Monograph 100C [2012]; Monograph 68 [1997] (Group 1 (carcinogenic to humans))
NTP:	Known Human Carcinogen (respirable size)
DFG:	Category 1 (causes cancer in man, alveola fraction)
OSHA:	Present (respirable size)

Germ Cell Mutagenicity
No data available.

Tumorigenic Data
No data available

Reproductive Toxicity
May damage fertility or the unborn child.

Specific Target Organ Toxicity - Single Exposure
kidneys, liver, thymus

Specific Target Organ Toxicity - Repeated Exposure
No target organs identified.

Aspiration hazard
No data available.

Medical Conditions Aggravated by Exposure
No data available.

Additional Data

This product contains crystalline silica, which is a known carcinogen. However, this component is bound by the polymer portion of the sealant. The only way this component would be released is through incineration.

Section 12 - ECOLOGICAL INFORMATION

Ecotoxicity

Avoid release to the environment.

Component Analysis - Aquatic Toxicity

Asphalt, oxidized	64742-93-4
Algae:	EC50 72 h Pseudokirchneriella subcapitata 56 mg/L IUCLID
Distillates, petroleum, petroleum residues vacuum	68955-27-1
Fish:	LC50 96 h Brachydanio rerio 48 mg/L [semi-static]
Residues, petroleum, vacuum	64741-56-6
Fish:	LC50 96 h Brachydanio rerio 48 mg/L [semi-static]
Hydrogen sulfide	7783-06-4
Fish:	LC50 96 h Lepomis macrochirus 0.0448 mg/L [flow-through]; LC50 96 h Pimephales promelas 0.016 mg/L [flow-through]
Solvent naphtha, petroleum, light aromatic	64742-95-6
Fish:	LC50 96 h Oncorhynchus mykiss 9.22 mg/L
Invertebrate:	EC50 48 h Daphnia magna 6.14 mg/L IUCLID
Cumene	98-82-8
Fish:	LC50 96 h Pimephales promelas 6.04 - 6.61 mg/L [flow-through]; LC50 96 h Oncorhynchus mykiss 4.8 mg/L [flow-through];

	LC50 96 h Oncorhynchus mykiss 2.7 mg/L [semi-static]; LC50 96 h Poecilia reticulata 5.1 mg/L [semi-static]
Algae:	EC50 72 h Pseudokirchneriella subcapitata 2.6 mg/L EPA
Invertebrate:	EC50 48 h Daphnia magna 0.6 mg/L IUCLID; EC50 48 h Daphnia magna 7.9 - 14.1 mg/L [static] EPA
Benzene, 1,2,4-trimethyl-	95-63-6
Fish:	LC50 96 h Pimephales promelas 7.19 - 8.28 mg/L [flow-through]
Invertebrate:	EC50 48 h Daphnia magna 6.14 mg/L IUCLID
Xylenes (o-, m-, p- isomers)	1330-20-7
Fish:	LC50 96 h Pimephales promelas 13.4 mg/L [flow-through]; LC50 96 h Oncorhynchus mykiss 2.661 - 4.093 mg/L [static]; LC50 96 h Oncorhynchus mykiss 13.5 - 17.3 mg/L; LC50 96 h Lepomis macrochirus 13.1 - 16.5 mg/L [flow-through]; LC50 96 h Lepomis macrochirus 19 mg/L; LC50 96 h Lepomis macrochirus 7.711 - 9.591 mg/L [static]; LC50 96 h Pimephales promelas 23.53 - 29.97 mg/L [static]; LC50 96 h Cyprinus carpio 780 mg/L [semi-static]; LC50 96 h Cyprinus carpio >780 mg/L; LC50 96 h Poecilia reticulata 30.26 - 40.75 mg/L [static]
Invertebrate:	EC50 48 h water flea 3.82 mg/L; LC50 48 h Gammarus lacustris 0.6 mg/L

Persistence and Degradability
No information available for the product.

Bioaccumulative Potential
No information available for the product.

Mobility
No information available for the product.

Other Toxicity
No additional information available.

Section 13 - DISPOSAL CONSIDERATIONS

Disposal Methods
Dispose of contents/container in accordance with local/regional/national/international regulations.

Section 14 - TRANSPORT INFORMATION

US DOT Information:
Shipping Name: Combustible liquid, n.o.s.
Hazard Class: Combustible liquid
UN/NA #: NA1993
Packing Group: III
Required Label(s): None
Additional information: Special Provisions (172.102): IB3, T1, T4, TP1

IATA Information:
UN#: UN1993

IMDG Information:
UN#: UN1993

TDG Information:
UN#: UN1993

Section 15 - REGULATORY INFORMATION

U.S. Federal Regulations
This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), and/or require an OSHA process safety plan.

Hydrogen sulfide	7783-06-4
SARA 302:	500 lb TPQ
SARA 313:	1 % de minimis concentration
CERCLA:	100 lb final RQ; 45.4 kg final RQ
OSHA (safety):	1500 lb TQ
SARA 304:	100 lb EPCRA RQ
Cumene	98-82-8
SARA 313:	1 % de minimis concentration

CERCLA:	5000 lb final RQ; 2270 kg final RQ
Benzene, 1,2,4-trimethyl-	95-63-6
SARA 313:	1 % de minimis concentration
Xylenes (o-, m-, p- isomers)	1330-20-7
SARA 313:	1 % de minimis concentration
CERCLA:	100 lb final RQ; 45.4 kg final RQ

SARA Section 311/312 (40 CFR 370 Subparts B and C)
Acute Health: Yes **Chronic Health:** Yes **Fire:** Yes **Pressure:** No **Reactivity:** No

U.S. State Regulations
The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	CA	MA	MN	NJ	PA
Asphalt	8052-42-4	Yes	Yes	Yes	Yes	Yes
Asphalt, oxidized	64742-93-4	No	No	No	Yes	No
Hydrogen sulfide	7783-06-4	Yes	Yes	Yes	Yes	Yes
Polycyclic aromatic hydrocarbons	130498-29-2	No	No	Yes	Yes	Yes
Cumene	98-82-8	Yes	Yes	Yes	Yes	Yes
Benzene, 1,2,4-trimethyl-	95-63-6	No	Yes	Yes	Yes	Yes
Xylenes (o-, m-, p- isomers)	1330-20-7	Yes	Yes	Yes	Yes	Yes
Limestone	1317-65-3	No	Yes	Yes	Yes	Yes
Silica, crystalline	14808-60-7	No	Yes	Yes	Yes	Yes

The following statement(s) are provided under the California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65):
WARNING! This product contains a chemical known to the state of California to cause cancer

Cumene	98-82-8
Carc:	carcinogen , 4/6/2010
Silica, crystalline	14808-60-7
Carc:	carcinogen , 10/1/1988 (airborne particles of respirable size)

Canadian WHMIS Ingredient Disclosure List (IDL)
Components of this material have been checked against the Canadian WHMIS Ingredients Disclosure List. The List is composed of chemicals which must be identified on MSDSs if they are included in products which meet WHMIS criteria specified in the Controlled Products Regulations and are present above the threshold limits listed on the IDL

Hydrogen sulfide	7783-06-4
	1 %
Cumene	98-82-8
	1 %
Benzene, 1,2,4-trimethyl-	95-63-6
	0.1 %
Silica, crystalline	14808-60-7
	1 %

Component Analysis - Inventory

Asphalt (8052-42-4)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	DSL	EIN	Yes	Yes	No	No	Yes	No	Yes	Yes	Yes

Asphalt, oxidized (64742-93-4)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	DSL	EIN	Yes	Yes	No	No	Yes	No	Yes	Yes	No

Distillates, petroleum, petroleum residues vacuum (68955-27-1)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	DSL	EIN	Yes	No	No	No	Yes	No	Yes	No	No

Residues, petroleum, vacuum (64741-56-6)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	DSL	EIN	Yes	Yes	No	No	Yes	No	Yes	Yes	Yes

Hydrogen sulfide (7783-06-4)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	DSL	EIN	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes

Polycyclic aromatic hydrocarbons (130498-29-2)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
No	No	No	No	No	No	No	No	No	No	No	Yes

Solvent naphtha, petroleum, light aromatic (64742-95-6)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	DSL	EIN	Yes	Yes	No	No	Yes	No	Yes	Yes	Yes

Cumene (98-82-8)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	DSL	EIN	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes

Benzene, 1,2,4-trimethyl- (95-63-6)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	DSL	EIN	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes

Xylenes (o-, m-, p- isomers) (1330-20-7)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	DSL	EIN	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes

Limestone (1317-65-3)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	NSL	EIN	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes

Silica, crystalline (14808-60-7)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	DSL	EIN	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes

Quaternary ammonium compounds, bis(hydrogenated tallow alkyl)dimethyl, salts with bentonite (68953-58-2)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	DSL	EIN	Yes	Yes	No	No	Yes	No	Yes	Yes	No

Section 16 - OTHER INFORMATION

HMIS Rating

Health: 2* Fire: 2 Reactivity: 0
Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe * = Chronic hazard

NFPA Ratings

Health: 2 Fire: 2 Reactivity: 0
Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

Summary of Changes
New SDS: June 2, 2015

Key / Legend
ACGIH - American Conference of Governmental Industrial Hygienists; ADR - European Road Transport; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CLP - Classification, Labelling, and Packaging; CN - China; CPR - Controlled Products Regulations; DFG - Deutsche Forschungsgemeinschaft; DOT - Department of Transportation; DSD - Dangerous Substance Directive; DSL - Domestic Substances List; EEC - European Economic Community; EINECS - European Inventory of Existing Commercial Chemical Substances; EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; ICAO - International Civil Aviation Organization; IDL - Ingredient Disclosure List; IDLH - Immediately Dangerous to Life and Health; IMDG - International Maritime Dangerous Goods; JP - Japan; Kow - Octanol/water partition coefficient; KR - Korea; LEL - Lower Explosive Limit; LLV - Level Limit Value; LOLI - List Of LIsts™ - ChemADVISOR's Regulatory Database; MAK - Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PH - Philippines; RCRA - Resource Conservation and Recovery Act; REACH- Registration, Evaluation, Authorisation, and restriction of Chemicals; RID - European Rail Transport; SARA - Superfund Amendments and Reauthorization Act; STEL - Short-term Exposure Limit; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act; TWA - Time Weighted Average; UEL - Upper Explosive Limit; US - United States.

Other Information

Disclaimer:

The information contained herein is based upon data and information available to us, and reflects our best professional judgment. This product may be formulated in part with components purchased from other companies. In many instances, especially when proprietary or trade secret materials are used, CCWI Company must rely upon the hazard evaluation of such components submitted by that product's manufacturer or importer. No warranty of merchantability, fitness for any use, or any other warranty is expressed or implied regarding the accuracy of such data or information. The results to be obtained from the use thereof, or that any such use does not infringe any patent, since the information contained herein may be applied under conditions of use beyond our control and with which we may be unfamiliar, we do not assume responsibility for the results of such application. This information is furnished upon the condition that the person receiving it shall make his own determination of the suitability of the material for his particular use

62 Kearney Street
Paterson, New Jersey 07522
Phone 862-257-9394
Fax 862-257-9394

1582 Likens Road
Marion, Ohio 43302
Phone 740-223-0150
Fax 740-223-0152

127 Nance Road
Calhoun, Georgia 30701
Phone 706-629-3030
Fax 706-629-3080

SAFTY DATA SHEET Date prepared 9-18-2014

Section 1: Identification

Product name: Clean Sweep waxbased sweeping compound
Emergency phone number: 800-222-1222
Product usage: Used to collect dirt and dust while sweeping.

Section 2: Hazard(s) Identification

Label elements: n/a
Signal word: n/a
H.M.I.S rating: Health 0, Flammability 1, Reactivity 0
Health hazards: I.A.R.C lists none of the ingredients as having any carcinogenic potential, nor has OSHA
Signs and symptoms on exposure: none
Hazard statements: none
Signal word: none
Emergency phone number: 800-222-1222

Section 3: Composition/Information on Ingredients

Hazardous components:
Highly refined oil cas# 64742-65-0 5MG/M3
Sawdust none assigned
Basic dye cas# 3441-14-3 for red, cas# 1330-38-7 for green

Section 4: First-Aid Measures

Inhalation: Led the person to fresh air and keep the person under watch.
Skin contact: Wash thoroughly with soap and water.
Eye contact: Flush eyes with plenty of water until irritation stops.
Ingestion: Give the person plenty to drink and keep the person under watch.
Signs and symptoms of exposure: n/a
Medical conditions generally aggravated by exposure: Persons highly allergic to organic solvents.
Indication of any immediate medical attention and special treatment needed:
If exposed or concerned, get immediate medical advice/attention.
Information to medics: Bring this safety data sheet.

Section 5: Firefighting Measures

Flash point: n/a Flammable limits: n/a
Extinguishing Media: Water or dry chemical.
Special fire fighting procedures: None required
Unusual fire and explosion hazards: None established

Section 6: Accidental Release Measures

Personal precautions: Avoid inhalation and eye contact.
Environmental precautions: In order to prevent outlet to the surrounding, put up waste containers.
Methods and material for containment: Use a broom and dust pan to sweep up and collect and then discard.
Other percautions: Keep away from open flame.

Section 7: Handling and Storage

Precautions for safe handling: none
Conditions for safe storage: Store in dry place. Keep product sealed for product quality.
Specific end use: This product should be used for applications described in Section 1.
Waste disposal method: Conventional trash disposal methods.

Section 8: Exposure Controls/Personal Protection

Respiratory Protection: none
Ventilation: Local exhaust-n/a, Mechanical (General)-n/a, Special-none
Productive gloves: Recommended
Eye Production: Recommended
Other: Keep out of eyes and avoid breathing dust.
Other protective clothing or equipment: none
Work/Hygienic practices: Wash hands after use.

Section 9: Physical and Chemical Properties

Boiling point:	n/a	Specific gravity:	n/a
Vapor pressure:	n/a	Melting point:	n/a
Vapor density:	n/a	Evaporation rate:	n/a

Solubility in water: Not soluble in water.
Appearance and odor: Colored granular material with odorless or slight paraffinic odor.

Section 10: Stability and Reactivity

Reactivity: No data available
Chemical stability: Stable
Possibility of hazardous reactions: Non specific
Incompatible materials: None
Hazardous decomposition products: The product is not degraded when as specified in section 1.

Section 11: Toxicological Information

Carcinogenicity:	no	NTP:	no	IARC monographs:	no	OSHA regulated:	no

Oral: No data currently available
Dermal: No data currently available
Eye effects: No data currently available
Skin effects: No data currently available
Mutagenicity: No data currently available
Inhalation: No data currently available
Skin sensitization: No data currently available
Respiratory sensitization: No data currently available
Additional toxicity data: No data currently available
Supplemental test data: No data currently available
Other data: No data currently available

Section 12: Ecological Information

(non-mandatory)

Section 13: Disposal Considerations

(non-mandatory)

Section 14: Transport Information

DOT regulation (ground): Not regulated
IATA regulation (air): Not regulated
IMDG/IMO regulation (water): Not regulated
DOT Hazard class: Not regulated
DOT Classification: Non-hazardous
Commodity class: class 50 sweeping compound

Section 15: Regulatory Information

(non-mandatory)

Section 16: Other Information

Last revision date: 9/8/2014
H.M.I.S rating: Health 0, Flammability 1, Reactivity 0

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9. Physical and chemical properties

Physical Form: No data found
Appearance: Fine Celled Foam
Color: N/A
Boiling Point: N/A
Melting Point: N/A
Freezing Point: No data found
Specific Gravity: 0 .03
Density: No data found
Bulk Density: N/A
Viscosity: No data found
pH: No data found
Water Solubility: Negligible
Partition Coefficient-Octanol / Water:
Molecular Weight: N/A
Decomposition Temp.: No data found

Taste: No data found
Odor: No data found
Odor Threshold: No data found
Vapor Pressure: N/A
Vapor Density: N/A
Evaporation Rate: No data found
VOC (Weight): No data found
VOC (Volume): No data found
Volatiles (Weight): No data found
Volatiles (Volume): N/A
Flash Point: No data found
Upper Explosion Limit: No data found
Lower Explosion Limit: No data found
Auto Ignition: No data found
Flammability (Solid, Gas): No data found

10. Stability and reactivity

STABILITY: Stable.
HAZARDOUS DECOMPOSITION: Carbon Dioxide, Carbon Monoxide, Hydrocarbon.
HAZARDOUS POLYMERIZATION: Will Not Occur.
CONDITIONS TO AVOID: No data found.
INCOMPATIBLE MATERIALS: N/A

11. Toxilogical information

ROUTES OF ENTRY: No data found.
SECONDARY: No data found.
TARGET ORGANS: No data found.
EFFECTS OF OVEREXPOSURE: N/A
CARCINOGENICITY: No data found.

12. Ecological Information

No data available for this product.

13. Disposal Considerations

Dispose of in landfill in compliance with applicable federal, state and local regulations

14. Transport information

D.O.T. Shipping Information: Not data found.
I.M.O. Shipping Information: Not data found.

15. Regulatory Information

No data found.

16. Other information

Issue Date: May 31, 2015
Revision Date: May 31, 2015

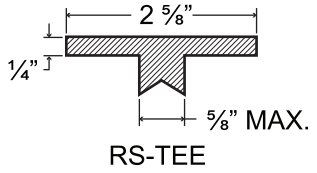
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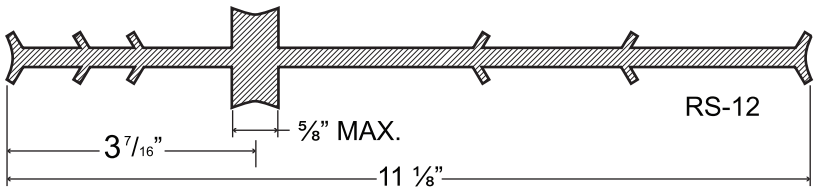
HOHMANN & BARNARD, INC.
a MiTek company

Control Joints / Expansion Joints

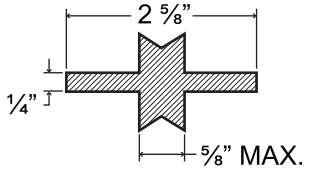
RS Series - Rubber Control Joint



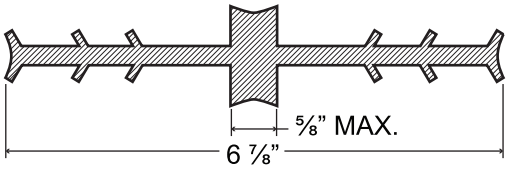
RS-TEE



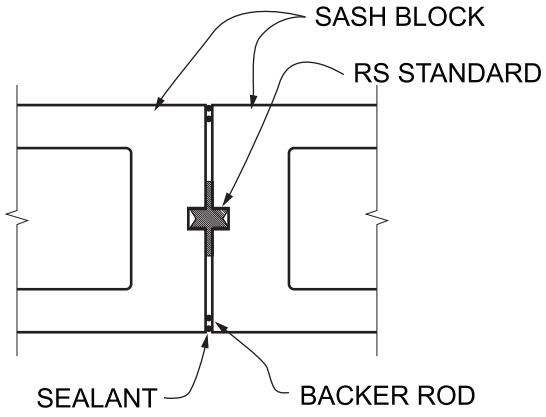
RS-12

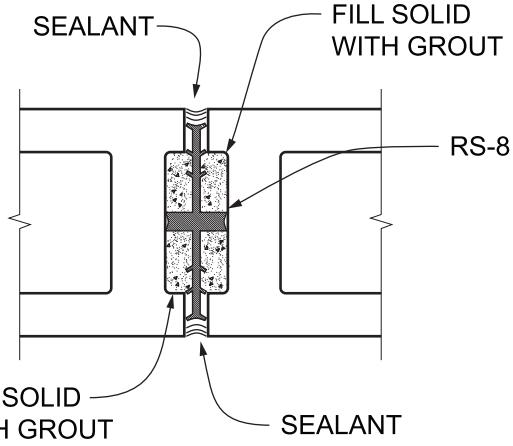


RS STANDARD



RS-8





DRAWINGS FOR ILLUSTRATIVE PURPOSES ONLY

MATERIAL SPECIFICATIONS:

- Extruded rubber material designed for masonry walls at control joints
- Rubber material conforms to ASTM D2000 M2AA-805 (type rubber 654-06) with a durometer hardness of 80 (+ or - 5) when tested in conformance with ASTM D2240
- RS Series rubber control joints are manufactured from 50% recycled material.

TEST DATA

	Typical Values	Test Method
Tensile Strength	1000	ASTMD-412
Ultimate Elongation	575%	ASTMD-412
Compression Set	45%	ASTMD-395 Method B
Low Temperature Brittleness	Passed	ASTMD-746
Shore A Hardness	80	
Heat Aged Physicals	70 hours@1000°C	
Tensile Strength	1135	
Ultimate Elongation	545%	
Shore A Hardness	82	

RS Series:
(Length per piece is 4 ft)

- [x] RS-STANDARD
- [ ] RS-TEE
- [ ] RS-8
- [ ] RS-12

IMPORTANT: Since each construction project is unique, the appropriate selection and use of any product contained herein must be determined by competent architects, engineers and other appropriate professionals who are familiar with the specific requirements of the project in question.

HOHMANN & BARNARD, Inc.
30 Rasons Court | Hauppauge, NY 11788
CORPORATE HEADQUARTERS
T: 800.645.0616 F: 631.234.0683
www.h-b.com

Branch/Subsidiary Locations:
ALABAMA - ILLINOIS - MARYLAND
NEW YORK - PENNSYLVANIA - TEXAS
UTAH - CANADA

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HOHMANN & BARNARD, INC.
a MiTek company

SAFETY DATA SHEET

1. Identification

Product Identifier: **Rubber – Blended EPDM compound**

Manufacturer:

Hohmann & Barnard, Inc.
30 Rasons Court
Hauppauge, NY 11788
(631) 234-0600
www.h-b.com

Telephone Numbers
During normal business hours call: (800) 645-0616
24-hour emergency call Chemtrec: (800) 255-3924

2. Hazards Identification

All rubber blends may emit processing vapors that are toxic. Good ventilation is needed. Prolonged and/or repeated contact with skin may cause irritation and inhalation of vapors during processing can irritate eyes and respiratory tract.

POTENTIAL HEALTH EFFECTS:

GHS Ratings:

Skin Sensitisation: 1B
Inhalation Toxicity: 3
Respiratory Tract Irritation: 3

GHS Hazards:

H317 May cause an allergic skin reaction
H331 Toxic if inhaled
H335 May cause respiratory irritation

GHS Precautions:

P261 Avoid breathing dust/fume/gas/mist/vapors/spray.
P271 Use only outdoors or in a well-ventilated area.
P272 Contaminated work clothing should not be allowed out of the workplace.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P311 Call a POISON CENTER or doctor/physician.
P312 Call a POISON CENTER or doctor/physician if you feel unwell.
P321 Specific treatment (see section 4).
P363 Wash contaminated clothing before reuse.
P302+P352
IF ON SKIN: wash with plenty of soap and water.
P304+P340
IF INHALED: Remove victim to fresh air and Keep at rest in a position comfortable for breathing.
P333+P313
IF SKIN irritation or rash occurs: Get medical advice/attention.
P405 Store locked up.
P403+P233
Store in a well-ventilated place. Keep container tightly closed.
P501 Dispose of contents/container to Federal, State and local regulations.

Signal Word: Danger



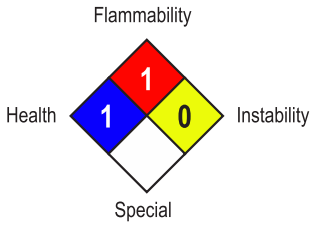
3. Composition/Information on Ingredients

1. Zinc oxide	CAS# 1314-13-2	
2. Carbon black	CAS# 1333-86-4	
3. Phenolic Resin	CAS# Not Available	Probable Carcinogen

Hazardous Material Information System (HMIS)

Health	2
Flammability	1
Physical Hazard	0
Personal Protection	E

National Fire Protection Association (NFPA)



HMIS & NFPA Hazard Rating Legend

* = CHRONIC HEALTH HAZARD
0 = INSIGNIFICANT
1 = SLIGHT
2 = MODERATE
3 = HIGH

4. First-Aid Measures

Inhalation: Remove to fresh air.
Skin Contact: Wash with soap and water.

5. Fire-fighting measures

FLASH POINT: N/D
AUTOIGNITION TEMPERATURE: N/D
FLAMMABLE LIMITS IN AIR: N/D
EXTINGUISHING MEDIA: Water, protein foams, and ABC dry powder.
HAZARDOUS COMBUSTION PRODUCTS: carbon monoxide, carbon dioxide, and small amounts of aromatic and aliphatic hydrocarbons.
FIRE FIGHTING PROCEDURES: Positive-pressure self-contained breathing apparatus (SCBA) must be used. No personnel may expose himself to vapors or smoke without SCBA. Rubber is a Class A combustible that produces toxic combustion products.
FIRE FIGHTER PROTECTION: No data found
UNUSUAL FIRE AND EXPLOSION HAZARDS: Emits acrid vapors when exposed to flames. Toxic gases will form during combustion and/or degradation.

6. Accidental release measures

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Clean up in a manner consistent of good housekeeping. Handle as a solid waste. Do not flush into public sewer or water system.
WASTE DISPOSAL METHODS: Dispose of in accordance with Federal, State and local regulations. This product is not defined as hazardous by current provisions of RCRA. (40CFR261)
CLEAN WATER ACT REQUIREMENTS: No data found.
RESOURCE CONSERVATION AND RECOVERY ACT (RCRA) REQUIREMENTS: Not defined.

7. Handling and storage

Store away from sources of heat and light.

8. Exposure controls/personal protection

ENGINEERING CONTROLS: No data found.
ADMINISTRATIVE CONTROLS: No data found.

PERSONAL PROTECTIVE EQUIPMENT
Avoid skin contact by use of personal protective equipment and good personal hygiene. In absence of adequate ventilation for hot processing vapors and/or where particulate limits are exceeded, use NOISH-certified respiratory protection as required.

VENTILATION
Local exhaust ventilation is required for all processing operations.

9. Physical and chemical properties

APPEARANCE: Amber, white or gray rubbery solid
SPECIFIC GRAVITY: Varies by compound
MELTING POINT: N/A
VAPOR PRESSURE: N/A
BOILING POINT: N/A
SOLUBILITY (H2O): Insoluble in water

10. Stability and reactivity

STABILITY: Stable at ambient temperature and pressure.
HAZARDOUS DECOMPOSITION: carbon monoxide, carbon dioxide, and small amounts of aromatic and aliphatic hydrocarbons. Smoke from all burning rubber must be considered toxic.
HAZARDOUS POLYMERIZATION: Will not occur
CONDITIONS TO AVOID: No data found
INCOMPATIBLE MATERIALS: None Known

11. Toxicological information

ROUTES OF ENTRY: Inhalation of processing vapors
TARGET ORGANS: Lungs
OVEREXPOSURE: No data found
CARCINOGENICITY: Not listed

12. Ecological Information

No data found.

13. Disposal Considerations

Dispose of in accordance with Federal, State and local regulations. This product is not defined as hazardous by current provisions of RCRA. (40CFR261)

14. Transport information

No data found.

15. Regulatory Information

No data found.

16. Other information

Issue Date: May 31, 2015
Revision Date: May 31, 2015

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MATERIAL SAFETY DATA SHEET

Section 1 – IDENTIFICATION OF THE MATERIAL AND SUPPLIER

IDENTIFICATION OF MATERIAL: Concrete Masonry Products (Block, Lintels, Pavers, SRW units, ACB, and Concrete Brick)

Manufacturer's Name:	MASOLITE llC	Emergency Telephone No:	260.432.3568
Address:	2200 LAFONTAIN STREET	Telephone No. for Information:	260.432.3568
City	FORT WAYNE	State: INDIANA	Zip: 46802

Section 2 – HAZARDOUS INGREDIENTS/IDENTIFY INFORMATION

Hazardous Components: Finished Concrete Masonry Products typically contain the following components that meet the hazard definitions and reporting requirements in 29CFR 1910.1200, the OSHA Hazard Communication standard:

Sand, Aggregates and Flyash (containing Crystalline Silica –Quartz and Cristobalite) Limestone Cement

Finished concrete masonry products are made with ingredients that are primarily nuisance dusts although some ingredients may contain crystalline silica. Some finished concrete masonry products may contain traces of residual materials from material enhancement additives such as plasticizers, accelerators, pigments or water repellants. The concentrations of trace materials are expected to be below reporting thresholds for the OSHA Hazard Communication standard.

Specific Chemical Identity:

- Silicon Dioxide SiO_2 (CAS 14808-60-7)
- Limestone (CAS 1317-65-3)
- Flyash (Coal Ash by-product CAS 68131-74-8)
- Cement (CAS 65997-15-1 for Portland Cement)

Common Names:

Sand also known as Silica, Flint, Sand, Crystalline Free Silica, Quartz, Ground Silica, Silica Flour
Limestone also known as marble, marble chips, granite, and calcium carbonate
Cement also known as Portland cement, cement kiln dust, kiln precipitator catch, waste kiln dust, and Ground Granulated Blast Furnace Slag cement
Flyash also known as boiler ash, coal ash byproduct, coal dust, coal flyash and pulverized flyash

Exposure Standards:

Substance	OSHA PEL-TWA	2006 version of ACGIH TLV-TWA®	NIOSH REL-TWA
Sand, Aggregates and Flyash containing crystalline silica (Quartz and Cristobalite)	See PEL formula below for Respirable silica-quartz	0.025 mg/m^3 (Respirable dust)	0.05 mg/m^3 (Respirable dust)
Limestone, Cement (as Portland Cement), Aluminum oxide and Flyash (All treated as Nuisance Particulates)	15 mg/m^3 Total dust 5 mg/m^3 Respirable dust	10 mg/m^3 Inhalable dust	10 mg/m^3 Total dust 5 mg/m^3 Respirable dust
Calcium oxide	5 mg/m^3 Total dust	2 mg/m^3 Inhalable dust	2 mg/m^3 Total dust

OSHA PEL: The Occupational Safety and Health Administration established Permissible Exposure Limits for the substances potentially present as components of concrete masonry dusts for 8-hour time-weighted average exposures. The OSHA PELs are legal control limits found in 29 CFR 1910.1000, Air Contaminants, Table Z-1, Table Z-2 and Table Z-3.

Exposure to respirable airborne crystalline silica shall not exceed an 8-hour time-weighted average limit as calculated using the formula below from 1910.1000, Table Z-3, Mineral Dusts:

Silica, Crystalline Quartz (Respirable Dust) $\dfrac{10mg/m^3}{\%Quartz + 2}$

For Cristobalite, use ½ the value calculated from the formula for Quartz.

Respirable dusts are particles collected after passing through an appropriate size-selective sampling device meeting the aerodynamic diameter criterion listed in 1910.1000, Table Z-3.

Section 2 – HAZARDOUS INGREDIENTS/IDENTIFY INFORMATION CONTINUED

ACGIH TLV: The American Conference of Governmental Industrial Hygienists established Threshold Limit Values for the substances potentially present as components of concrete masonry dust for 8-hour time-weighted average exposures. The ACGIH TLVs are exposure standards recommended as a matter of good safety and health practice.

NIOSH REL: The National Institute for Occupational Safety and Health (NIOSH). Recommended Exposure Limits established standard maximum permissible concentrations as determined by a full-shift sample up to a 10-hour work day, 40-hour work week.

Note: The addition of Flyash and Ground Granulated Blast Furnace Slag cement may introduce trace metal contaminants. Exclusive use of Ground Granulated Blast Furnace Slag Cements in a typical concrete or masonry product mixture may add metallic oxides of Aluminum and Calcium in excess of the 1% hazard ingredient reporting threshold by OSHA.

It should be noted that some states have State operated OSHA programs with exposure standards that may be more stringent than the Federal OSHA PELs reported. You should consult the individual OSHA PELs for your state to determine if there are different exposure levels enforced for the substances present in finished concrete masonry products.

Section 3 – PHYSICAL/CHEMICAL CHARACTERISTICS

Boiling Point:	N/A	**Specific Gravity (H_20 = 1):**	N/A
Vapor Pressure:	N/A	**Melting Point:**	N/A
Vapor Density:	N/A	**Evaporation Rate (Butyl Acetate = 1):**	N/A
Solubility in Water:	N/A	**Appearance and Odor:**	N/A

Section 4 – FIRE AND EXPLOSION HAZARD DATA

Flash Point (Method Used):	N/A	**Extinguishing Media:**	N/A
Flammable Limits:	N/A	**LEL:** N/A	**UEL:** N/A
Extinguishing Media:	N/A	**Special Fire Fighting Procedures:**	None
Unusual Fire and Explosion Hazards:	None		

Section 5 – REACTIVITY DATA

Stability: **Unstable:** **Stable:** X **Conditions to avoid:** None

Incompatibility (Materials to Avoid): Concrete and Limestone react with strong acids to liberate carbon dioxide.

Hazardous Decomposition or Byproducts: The curing process for concrete masonry products may consume oxygen that should produce no significant hazard under normal operating conditions. Under extreme conditions in an enclosed environment, it could possibly produce an oxygen deficient environment unsuitable for continuous human occupancy. In an enclosed environment, adequate fresh air should be provided and suitable atmospheric testing should be conducted to verify the oxygen content is suitable.

Hazardous Polymerization: **May Occur:** **Will Not Occur:** x **Conditions to Avoid:** None

Section 6 – HEALTH HAZARD DATA

Route(s) of Entry:
Inhalation? Yes **Skin?** No **Ingestion?** No

Inhalation is the primary route of entry for substances present in concrete masonry products.

Wet concrete products may cause irritation of the skin after direct skin contact due to the alkaline nature of components blended into the wet concrete slurry. Trace amounts of hexavalent chromium have also been associated with chromate sensitive contact dermatitis in workers exposed to wet cement or concrete. Dry concrete dusts are unlikely to produce skin irritation under expected conditions of exposure; however, if skin irritation is experienced, efforts should be made to prevent skin contact using good hygiene and protective equipment practices. Handling finished concrete masonry products can be abrasive to the skin.

Ingestion is an unlikely route of entry in most occupational settings.

Health Hazards (Acute and Chronic): Under normal conditions of handling and use, dust exposures from concrete masonry products should be minimal. Finishing processes such as sanding or cutting may release dusts containing respirable crystalline silica. Prolonged exposure to dusts containing respirable crystalline silica may cause delayed (chronic) lung injury (silicosis). Acute or rapidly developing silicosis may occur in a short period of time after heavy exposure. Silicosis is a form of disabling pulmonary fibrosis, which can be progressive and may lead to death. Bronchitis and tuberculosis are also diseases associated with inhalation of dusts containing respirable silica. Some studies indicate an association with lung cancer from exposure to silica.

Carcinogenicity: Finished concrete masonry products are not considered to be carcinogenic. Concrete dusts created by mechanical finishing processes such as sawing and sanding may contain concentrations of respirable crystalline silica-quartz with carcinogenic classifications by the organizations listed below:

NTP: Yes

The National Toxicology Program (NTP) published its Eleventh Annual Report on Carcinogens which concludes that “silica, crystalline (respirable)” is known to be a human carcinogen. The NTP conclusion is based on sufficient evidence for the carcinogenicty of respirable crystalline silica from studies in humans indicates a causal relationship between exposure and increasing lung cancer rates in workers exposed to crystalline silica was reviewed in IARC, 1997; Brown et. al., Horizdot, et. al., 1997

IARC Monographs? Yes

IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Humans (volume 68, 1997) concludes that there is sufficient evidence for the carcinogenicity of crystalline silica to experimental animals, and that there is limited evidence of the carcinogenicity of crystalline silica to humans. IARC Group 1 Carcinogenic to humans.

Signs and Symptoms of Exposure: Shortness of breath following physical exertion, severe cough, fatigue, loss of appetite, chest pains and fever. (Source NIOSH/DOL Factsheet – “Preventing Silicosis”)

Medical Conditions Generally Aggravated by Exposure: Pre-existing lung diseases such as emphysema or asthma: Pulmonary function may be reduced by inhalation of respirable crystalline silica. Also lung scarring produced by such inhalation may lead to a progressive massive fibrosis of the lung which may aggravate other pulmonary conditions and diseases and which increases susceptibility to pulmonary tuberculosis. Progressive massive fibrosis may be accompanied by right heart enlargement, heart failure, and pulmonary failure. Smoking may aggravate the effects of exposure.

Section 6 – HEALTH HAZARD DATA CONTINUED

Emergency and First Aid Procedures: For sand in eyes during dry sawing or grinding operations, immediately flush generously with water for 15 minutes. If irritation persists, seek medical attention. For gross inhalation, remove person immediately to fresh air, give artificial respiration as needed, seek medical attention as needed.

Wet concrete products may cause irritation of the skin after direct skin contact due to the alkaline nature of components blended into the wet concrete slurry. Trace amounts of hexavalent chromium have also been associated with chromate sensitive contact dermatitis in workers exposed to wet cement or concrete. Dry concrete dusts are unlikely to produce skin irritation under expected conditions of exposure; however, if skin irritation is experienced, efforts should be made to prevent skin contact using good hygiene and protective equipment practices. Handling finished concrete masonry products can be abrasive to the skin.

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Section 7 – PRECAUTIONS FOR SAFE HANDLING AND USE

Steps to be taken in Case Material is Released or Spilled: Utilize wet methods to minimize airborne dust concentrations whenever feasible. When dry sawing or grinding, use dustless systems for handling, storage, and cleaning so that airborne dust does not exceed the PEL. Use adequate ventilation and dust control/suppression equipment. Practice good housekeeping. Do not permit dust to collect on walls, floors, sills, ledges, machinery, or equipment. Maintain, clean, and fit test respirators in accordance with OSHA regulations. Maintain and test ventilation and dust collection equipment. Wash or vacuum clothing which has become dusty. See also control measures in Section VIII.

Waste Disposal Method: Normal breakage may be picked up and discarded as common waste. Residue from dry sawing and grinding operations should be disposed of in accordance with Federal, State, and Local regulations.

Precautions to be Taken in Handling and Storing: None.

Other Precautions: See OSHA Hazard Communication Rule 29 CFR Sections 1910.1200, 1915.99, 1917.28, 1918.90, 1926.59, and 1928.21, and state and local worker or community "right to know" laws and regulations. We recommend that smoking be prohibited in all areas where respirators must be used. WARN YOUR EMPLOYEES (AND YOUR CUSTOMERS – USERS IN CASE OF RESALE) BY POSTING, AND OTHER MEANS, OF THE HAZARD AND OSHA PRECAUTIONS TO BE USED. PROVIDE TRAINING FOR YOUR EMPLOYEES ABOUT THE OSHA PRECAUTIONS. See also American Society for Testing and Materials (ASTM) Standard Practice E1132-86, "Standard Practice for Health Requirements Relating to Occupational Exposure to Quartz Dust."

Section 8 – CONTROL MEASURES

Respiratory Protection

Utilize suitable NIOSH approved respiratory protection devices whenever finished concrete or masonry products are used in a manner that produces dusts in excess of applicable exposure standards. Respirators should be selected based upon the exposure level encountered using industrial hygiene data and accepted respiratory protection practices. Since it is the respirable fraction of primary medical concern for dusts containing crystalline silica, it is advisable to utilize respiratory protection devices with High Efficiency Particulate Arresting capabilities (HEPA filtered). Consult a trained safety and health professional for assistance with proper selection of respiratory protection devices based upon your exposure situation.

All use of respiratory protection devices should be done consistent with requirements in the OSHA Respiratory Protection standard, 1910.134.

The NIOSH Respirator Topics page (www. cdc.gov/niosh/npptl/topics/respirators/) should be consulted for additional information on respiratory protection.

Local Exhaust: When finishing tasks produce concrete dusts in excess of applicable exposure standards, use sufficient local exhaust to reduce the level of respirable dust below the applicable exposure standard. See ACGIH "Industrial Ventilation, A Manual of Recommended Practice," latest edition.

Mechanical
Use wet methods whenever feasible to prevent generation of airborne dusts when finishing concrete or masonry products.

Special
See "Other Precautions" under Section VII.

Other
See "Other Precautions" under Section VII.

Section 8 – CONTROL MEASURES CONTINUED

Protective Gloves
Wear suitable protective gloves to prevent mechanical abrasion of the skin when handling finished concrete masonry products.

Eye Protection
When sawing or grinding concrete masonry products, wear protective shield or tight fitting goggles (safety glasses).

Other Protective Clothing or Equipment
Optional

Work/Hygienic Practices
Utilize wet methods for cutting, sanding or cleaning tasks that produce airborne dust whenever feasible. Avoid creating and breathing dust. Minimize skin contact using good hygiene and protective equipment practices. See "Other Precautions" under Section VII.

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, express or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful health effects, which may be caused by exposure to airborne dust particles created by dry sawing or grinding of our products. Customers/users of concrete masonry products must comply with all applicable health and safety laws, regulations, and orders.

Supplemental Information discussing OSHA PEL change

OSHA continues to consider establishment of a substance specific standard to regulate Silica similar to the regulations found in Subpart Z for Toxic and Hazardous Substances.

SAFETY DATA SHEET

1. Product and Company Identification

Product identifier	**Concrete Masonry Products (Ft. Wayne, IN)**
Other means of identification	Light Weight Cement, Medium Weight Cement, Normal Weight Cement, Normal Weight Cement IWR
Recommended use	Cement
Recommended restrictions	None known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company name	Masolite, LLC
Address	2200 Lafontain Street Fort Wayne, IN 46802 United States
Telephone	260-432-3568
Website	www.masolite.com
E-mail	mflaherty@masolite.com
Emergency phone number	260-432-3568

2. Hazards Identification

Physical hazards	Not classified.	
Health hazards	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 1
	Sensitization, skin	Category 1B
	Carcinogenicity	Category 1A
	Specific target organ toxicity, repeated exposure	Category 1
Environmental hazards	Not classified.	
OSHA defined hazards	Not classified.	

Label elements



Signal word	Danger
Hazard statement	Causes skin irritation. May cause an allergic skin reaction. Causes serious eye damage. May cause cancer. Causes damage to organs through prolonged or repeated exposure.

Precautionary statement

Prevention	Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. Do not breathe dust/fume/gas/mist/vapors/spray. Contaminated work clothing must not be allowed out of the workplace. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not eat, drink or smoke when using this product.
Response	If exposed or concerned: Get medical advice/attention. If on skin: Wash with plenty of water. Specific treatment (see information on this label). If skin irritation or rash occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor.
Storage	Store locked up.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	None known.
Supplemental information	None.

3. Composition/Information on Ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Limestone		1317-65-3	40-91
Crystalline silica		14808-60-7	0.1-30
Cement, portland, chemicals		65997-15-1	9-16
Gypsum (Ca(SO4).2H2O)		13397-24-5	0-1.6
Calcium oxide		1305-78-8	0-1
Magnesium oxide		1309-48-4	0-1

Composition comments US GHS: The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret in accordance with paragraph (i) of §1910.1200.

4. First Aid Measures

Inhalation Avoid breathing dust. If symptoms develop move victim to fresh air. If symptoms persist, obtain medical attention.

Skin contact If on skin: Wash with plenty of water. Specific treatment (see information on this label). If skin irritation or rash occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse.

Eye contact If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor.

Ingestion Rinse mouth. Do not induce vomiting. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Never give anything by mouth if victim is unconscious, or is convulsing. Obtain medical attention.

Most important symptoms/effects, acute and delayed Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Coughing. Skin irritation. May cause redness and pain. May cause an allergic skin reaction. Dermatitis. Rash. Prolonged exposure may cause chronic effects.

Indication of immediate medical attention and special treatment needed Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

General information IF exposed or concerned: Get medical advice/attention. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before reuse. Avoid contact with eyes and skin. Avoid breathing dusts from this material. Keep out of reach of children.

5. Fire Fighting Measures

Suitable extinguishing media Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire fighting equipment/instructions Use water spray to cool unopened containers.

Specific methods Use standard firefighting procedures and consider the hazards of other involved materials.

General fire hazards No unusual fire or explosion hazards noted.

6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

Environmental precautions	Avoid discharge into drains, water courses or onto the ground. Do not discharge into lakes, streams, ponds or public waters.

7. Handling and Storage

Precautions for safe handling	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep formation of airborne dusts to a minimum. Provide appropriate exhaust ventilation at places where dust is formed. Do not breathe dust. Do not get this material in contact with eyes. Avoid contact with eyes, skin, and clothing. When using, do not eat, drink or smoke. Avoid prolonged exposure. Wear appropriate personal protective equipment. Wash thoroughly after handling. Use good industrial hygiene practices in handling this material.
Conditions for safe storage, including any incompatibilities	Store locked up. Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS). Keep out of reach of children.

8. Exposure Controls/Personal Protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Calcium oxide (CAS 1305-78-8)	PEL	5 mg/m3	
Cement, portland, chemicals (CAS 65997-15-1)	PEL	5 mg/m3	Respirable fraction.
		15 mg/m3	Total dust.
Gypsum (Ca(SO4).2H2O) (CAS 13397-24-5)	PEL	5 mg/m3	Respirable fraction.
		15 mg/m3	Total dust.
Limestone (CAS 1317-65-3)	PEL	5 mg/m3	Respirable fraction.
		15 mg/m3	Total dust.
Magnesium oxide (CAS 1309-48-4)	PEL	15 mg/m3	Total particulate.

US. OSHA Table Z-3 (29 CFR 1910.1000)

Components	Type	Value	Form
Cement, portland, chemicals (CAS 65997-15-1)	TWA	50 mppcf	
Crystalline silica (CAS 14808-60-7)	TWA	0.3 mg/m3	Total dust.
		0.1 mg/m3	Respirable.
		2.4 mppcf	Respirable.

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Calcium oxide (CAS 1305-78-8)	TWA	2 mg/m3	
Cement, portland, chemicals (CAS 65997-15-1)	TWA	1 mg/m3	Respirable fraction.
Crystalline silica (CAS 14808-60-7)	TWA	0.025 mg/m3	Respirable fraction.
Gypsum (Ca(SO4).2H2O) (CAS 13397-24-5)	TWA	10 mg/m3	Inhalable fraction.
Magnesium oxide (CAS 1309-48-4)	TWA	10 mg/m3	Inhalable fraction.

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Calcium oxide (CAS 1305-78-8)	TWA	2 mg/m3	
Cement, portland, chemicals (CAS 65997-15-1)	TWA	5 mg/m3	Respirable.
		10 mg/m3	Total
Crystalline silica (CAS 14808-60-7)	TWA	0.05 mg/m3	Respirable dust.

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Gypsum (Ca(SO4).2H2O) (CAS 13397-24-5)	TWA	5 mg/m3	Respirable.
		10 mg/m3	Total
Limestone (CAS 1317-65-3)	TWA	5 mg/m3	Respirable.
		10 mg/m3	Total

Biological limit values No biological exposure limits noted for the ingredient(s).

Exposure guidelines Occupational exposure to nuisance dust (total and respirable) and respirable crystalline silica should be monitored and controlled.

US ACGIH Threshold Limit Values: Skin designation

Ethanol, 2,2''-iminobis- (CAS 111-42-2) Can be absorbed through the skin.

Appropriate engineering controls Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Individual protection measures, such as personal protective equipment

Eye/face protection Chemical splash goggles. Use tight fitting goggles if dust is generated.

Skin protection

Hand protection Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.

Other Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended. As required by employer code.

Respiratory protection Where exposure guideline levels may be exceeded, use an approved NIOSH respirator. Respirator should be selected by and used under the direction of a trained health and safety professional following requirements found in OSHA's respirator standard (29 CFR 1910.134), CAN/CSA-Z94.4 and ANSI's standard for respiratory protection (Z88.2). Use a particulate filter respirator for particulate concentrations exceeding the Occupational Exposure Limit.

Thermal hazards Not applicable.

General hygiene considerations Observe any medical surveillance requirements. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace. When using do not eat or drink.

9. Physical and Chemical Properties

Appearance Granular solid

Physical state Solid.

Form Solid.

Color Grey

Odor Odorless

Odor threshold Not available.

pH Not available.

Melting point/freezing point Not available.

Initial boiling point and boiling range Not available.

Pour point Not available.

Specific gravity Not available.

Partition coefficient (n-octanol/water) Not available.

Flash point Not available.

Evaporation rate Not available.

Flammability (solid, gas) Not available.

Upper/lower flammability or explosive limits

Flammability limit - lower (%) Not available.

Flammability limit - upper (%) Not available.

Explosive limit - lower (%) Not available.

Explosive limit - upper (%)	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	Insoluble
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.

10. Stability and Reactivity

Reactivity	This product may react with strong oxidizing agents.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Chemical stability	Material is stable under normal conditions.
Conditions to avoid	Do not mix with other chemicals. This product reacts with acids.
Incompatible materials	Powerful oxidizers. Fluorine. Chlorine. Acids.
Hazardous decomposition products	May include and are not limited to: Oxides of carbon.

11. Toxicological Information

Information on likely routes of exposure

Inhalation	Prolonged inhalation may be harmful.
Skin contact	Causes skin irritation. May cause an allergic skin reaction.
Eye contact	Causes serious eye damage.
Ingestion	May cause stomach distress, nausea or vomiting.
Symptoms related to the physical, chemical and toxicological characteristics	Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Coughing. Skin irritation. May cause redness and pain. May cause an allergic skin reaction. Dermatitis. Rash.

Information on toxicological effects

Acute toxicity May cause an allergic skin reaction.

Components	**Species**	**Test Results**
Calcium oxide (CAS 1305-78-8)		
Acute		
Inhalation		
LC50	Not available	
Oral		
LD50	Not available	
Cement, portland, chemicals (CAS 65997-15-1)		
Acute		
Dermal		
LD50	Not available	
Inhalation		
LC50	Not available	
Oral		
LD50	Not available	
Crystalline silica (CAS 14808-60-7)		
Acute		
Inhalation		
LC50	Not available	
Oral		
LD50	Rat	500 mg/kg

Components	Species	Test Results
Limestone (CAS 1317-65-3)		
Acute		
Inhalation		
LC50	Not available	
Oral		
LD50	Rat	6450 mg/kg
Magnesium oxide (CAS 1309-48-4)		
LC50		
Inhalation		
LC50	Not available	
LD50		
Oral		
LD50	Rat	3990 mg/kg

Skin corrosion/irritation	Causes skin irritation.
Exposure minutes	Not available.
Erythema value	Not available.
Oedema value	Not available.
Serious eye damage/eye irritation	Causes serious eye damage.
Corneal opacity value	Not available.
Iris lesion value	Not available.
Conjunctival reddening value	Not available.
Conjunctival oedema value	Not available.
Recover days	Not available.
Respiratory or skin sensitization	
Respiratory sensitization	Not a respiratory sensitizer.
Skin sensitization	May cause an allergic skin reaction.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	Finished concrete masonry products are not considered to be carcinogenic. Concrete dusts created by mechanical finishing processes such as sawing and sanding may contain concentrations of respirable crystalline silica-quartz with carcinogenic classifications by the organizations listed below. May cause cancer. In 1997, IARC (the International Agency for Research on Cancer) concluded that crystalline silica inhaled from occupational sources can cause lung cancer in humans. However in making the overall evaluation, IARC noted that "carcinogenicity was not detected in all industrial circumstances studied. Carcinogenicity may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity or distribution of its polymorphs." (IARC Monographs on the evaluation of the carcinogenic risks of chemicals to humans, Silica, silicates dust and organic fibres, 1997, Vol. 68, IARC, Lyon, France.) In June 2003, SCOEL (the EU Scientific Committee on Occupational Exposure Limits) concluded that the main effect in humans of the inhalation of respirable crystalline silica dust is silicosis. "There is sufficient information to conclude that the relative risk of lung cancer is increased in persons with silicosis (and, apparently, not in employees without silicosis exposed to silica dust in quarries and in the ceramic industry). Therefore, preventing the onset of silicosis will also reduce the cancer risk..." (SCOEL SUM Doc 94-final, June 2003) According to the current state of the art, worker protection against silicosis can be consistently assured by respecting the existing regulatory occupational exposure limits. Occupational exposure to respirable dust and respirable crystalline silica should be monitored and controlled.

ACGIH Carcinogens

Cement, portland, chemicals (CAS 65997-15-1)	A4 Not classifiable as a human carcinogen.
Crystalline silica (CAS 14808-60-7)	A2 Suspected human carcinogen.
Ethanol, 2,2''-iminobis- (CAS 111-42-2)	A3 Confirmed animal carcinogen with unknown relevance to humans.
Magnesium oxide (CAS 1309-48-4)	A4 Not classifiable as a human carcinogen.

IARC Monographs. Overall Evaluation of Carcinogenicity

Crystalline silica (CAS 14808-60-7)	Volume 68, Volume 100C 1 Carcinogenic to humans.

Ethanol, 2,2''-iminobis- (CAS 111-42-2) Volume 77, Volume 101 - 2B Possibly carcinogenic to humans.

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

Amides, coco, N,N-bis(hydroxyethyl) (CAS 68603-42-9)
Crystalline silica (CAS 14808-60-7)
Ethanol, 2,2''-iminobis- (CAS 111-42-2)

US. National Toxicology Program (NTP) Report on Carcinogens

Crystalline silica (CAS 14808-60-7) Known To Be Human Carcinogen.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	Not classified.
Specific target organ toxicity - repeated exposure	Causes damage to organs through prolonged or repeated exposure.
Aspiration hazard	Not an aspiration hazard.
Chronic effects	Causes damage to organs through prolonged or repeated exposure. Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects.
Further information	Not available.

12. Ecological Information

Ecotoxicity See below

Ecotoxicological data

Components		**Species**	**Test Results**
Gypsum (Ca(SO4).2H2O) (CAS 13397-24-5)			
Aquatic			
Fish	LC50	Fathead minnow (Pimephales promelas)	> 1970 mg/L, 96 hours

Persistence and degradability	No data is available on the degradability of this product.
Bioaccumulative potential	
Mobility in soil	
Mobility in general	No data available. Not available.
Other adverse effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal Considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport Information

U.S. Department of Transportation (DOT)

Not regulated as dangerous goods.

15. Regulatory Information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Ethanol, 2,2''-iminobis- (CAS 111-42-2) Listed.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories	Immediate Hazard - Yes Delayed Hazard - Yes Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No
SARA 302 Extremely hazardous substance	No
SARA 311/312 Hazardous chemical	No

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Ethanol, 2,2''-iminobis- (CAS 111-42-2)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

US state regulations

US - California Hazardous Substances (Director's): Listed substance

Calcium oxide (CAS 1305-78-8)	Listed.
Ethanol, 2,2''-iminobis- (CAS 111-42-2)	Listed.
Magnesium oxide (CAS 1309-48-4)	Listed.

US - Illinois Chemical Safety Act: Listed substance

Ethanol, 2,2''-iminobis- (CAS 111-42-2)

US - Louisiana Spill Reporting: Listed substance

Ethanol, 2,2''-iminobis- (CAS 111-42-2)	Listed.

US - Minnesota Haz Subs: Listed substance

Calcium oxide (CAS 1305-78-8)	Listed.
Cement, portland, chemicals (CAS 65997-15-1)	Listed.
Crystalline silica (CAS 14808-60-7)	Listed.
Ethanol, 2,2''-iminobis- (CAS 111-42-2)	Listed.
Gypsum (Ca(SO4).2H2O) (CAS 13397-24-5)	Listed.
Limestone (CAS 1317-65-3)	Listed.
Magnesium oxide (CAS 1309-48-4)	Listed.

US - New Jersey RTK - Substances: Listed substance

Calcium oxide (CAS 1305-78-8)
Cement, portland, chemicals (CAS 65997-15-1)
Crystalline silica (CAS 14808-60-7)
Ethanol, 2,2''-iminobis- (CAS 111-42-2)
Gypsum (Ca(SO4).2H2O) (CAS 13397-24-5)
Limestone (CAS 1317-65-3)
Magnesium oxide (CAS 1309-48-4)

US - Texas Effects Screening Levels: Listed substance

Calcium oxide (CAS 1305-78-8)	Listed.
Cement, portland, chemicals (CAS 65997-15-1)	Listed.
Crystalline silica (CAS 14808-60-7)	Listed.
Ethanol, 2,2''-iminobis- (CAS 111-42-2)	Listed.
Limestone (CAS 1317-65-3)	Listed.
Magnesium oxide (CAS 1309-48-4)	Listed.

US. Massachusetts RTK - Substance List

Calcium oxide (CAS 1305-78-8)
Cement, portland, chemicals (CAS 65997-15-1)
Crystalline silica (CAS 14808-60-7)
Ethanol, 2,2''-iminobis- (CAS 111-42-2)
Gypsum (Ca(SO4).2H2O) (CAS 13397-24-5)
Limestone (CAS 1317-65-3)
Magnesium oxide (CAS 1309-48-4)

US. New Jersey Worker and Community Right-to-Know Act

Ethanol, 2,2''-iminobis- (CAS 111-42-2)

US. Pennsylvania Worker and Community Right-to-Know Law

Calcium oxide (CAS 1305-78-8)
Cement, portland, chemicals (CAS 65997-15-1)
Crystalline silica (CAS 14808-60-7)
Ethanol, 2,2''-iminobis- (CAS 111-42-2)
Gypsum (Ca(SO4).2H2O) (CAS 13397-24-5)

Limestone (CAS 1317-65-3)
Magnesium oxide (CAS 1309-48-4)

US. Rhode Island RTK

Ethanol, 2,2''-iminobis- (CAS 111-42-2)

US. California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

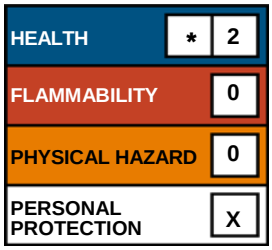
Amides, coco, N,N-bis(hydroxyethyl) (CAS 68603-42-9)	Listed: June 22, 2012
Crystalline silica (CAS 14808-60-7)	Listed: October 1, 1988
Ethanol, 2,2''-iminobis- (CAS 111-42-2)	Listed: June 22, 2012

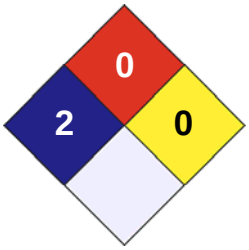
Country(s) or region	Inventory name	On inventory (yes/no)*
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s)

16. Other Information

LEGEND	
Severe	4
Serious	3
Moderate	2
Slight	1
Minimal	0





Disclaimer The information in the sheet was written based on the best knowledge and experience currently available. Information contained herein was obtained from sources considered technically accurate and reliable. While every effort has been made to ensure full disclosure of product hazards, in some cases data is not available and is so stated. Since conditions of actual product use are beyond control of the supplier, it is assumed that users of this material have been fully trained according to the requirements of all applicable legislation and regulatory instruments. No warranty, expressed or implied, is made and supplier will not be liable for any losses, injuries or consequential damages which may result from the use of or reliance on any information contained in this document.

Issue date 27-May-2016

Further information Not available.

Other information This Safety Data Sheet was prepared to comply with the current OSHA Hazard Communication Standard (HCS) adoption of the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

Prepared by SES Environmental Phone: 260-497-7645

SECTION I: PRODUCT IDENTIFICATION

SPEC MIX, Inc.
1230 Eagan Industrial Rd. Ste 160
Eagan, MN 55121

Emergency Telephone Number (800) 535-5053
Information Telephone Number (888) 773-2649

Revised: Apr-17
SDS SM2

Product Name	Item #(s)
Core Fill Masonry Grout – Coarse	(CF-02)
Core Fill Masonry Grout – Fine	(CF-03)
Self Consolidating Grout – Fine	(SC-02)
Self Consolidating Grout – Coarse	(SC-03)

Product Use: Portland cement-based, masonry grouts for filling the cores of concrete masonry units or for backfilling voids

SECTION II - HAZARD IDENTIFICATION

Hazard-determining components of labeling: Silica, Portland cement
2.1 Classification of the substance or mixture
Carcinogen – Category 1A
Skin Corrosion – Category 1B
Skin Sensitization – Category 1B
Specific Target Organ Toxicity Repeat Exposure – Category 1
Specific Target Organ Toxicity: Single Exposure – Category 3

2.2a Signal word DANGER!

2.2b Hazard Statements
May cause cancer through chronic inhalation
Causes severe skin burns and serious eye damage
May cause an allergic skin reaction
Causes damage to lungs through prolonged or repeated inhalation
May cause respiratory irritation

2.2c Pictograms



2.2d Precautionary statements

Do not handle until all safety precautions have been read and understood.
Wear protective gloves, eye protection, and protective clothing.
Do not eat, drink or smoke when using this product.
Wash thoroughly after handling.
Use in a well-ventilated area.
Do not breathe dust.

If swallowed: Rinse mouth. Do NOT induce vomiting.
If inhaled: Remove person to fresh air and keep comfortable for breathing.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If on skin (or hair): Remove immediately all contaminated clothing and wash before re-use. Rinse skin or hair with water.
If significant skin irritation or rash occurs: get medical advice or attention.
Immediately seek medical advice or attention if symptoms are significant or persist.

Store in a well-ventilated place. Keep container tightly closed.
Dispose of contents/containers in accordance with all regulations.

2.3 Additional Information Precautions must be observed because burns occur with little warning -- little heat is sensed.

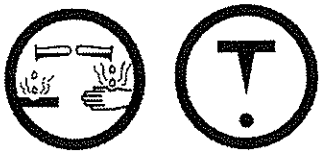
2.3a HNOC – Hazards not otherwise classified: Not applicable

2.3b Unknown Acute Toxicity: None
2.3C WHMIS Classification

Class D2B – Skin/Eye Irritant
Class D2A – Chronic Toxic Effects – Carcinogen
Class E – Corrosive Material

2.3d Label Elements According To WHMIS

Hazard Symbols



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Signal Word
DANGER!

SECTION III - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

Hazardous Components	CAS No.	% by Weight
Sand, Silica, Quartz	14808-60-7	40-70*
Portland Cement	65997 15 1	10-30*
Fly Ash	68131-74-8	5-10*

*The concentrations ranges are provided due to batch-to-batch variability.
None of the constituents of this material are of unknown toxicity.

SECTION IV – FIRST AID MEASURES

4.1 Description of the first-aid measures
General information:
After inhalation: Remove person to fresh air. If breathing is difficult, administer oxygen. If not breathing, give artificial respiration. In case of unconsciousness, place patient stably in side position for transportation.
After skin contact: Wash skin with cool water and pH-neutral soap or a mild detergent. If significant skin irritation or rash occurs: get medical advice or attention.
After eye contact: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
After swallowing: Do not induce vomiting. If conscious, have the victim drink plenty of water and call a physician immediately. Never give anything by mouth to an unconscious person.

4.2 Most important symptoms/effects, acute and delayed
Inhalation: May cause respiratory tract irritation. Causes damage to organs through prolonged or repeated inhalation. This product contains crystalline silica. Prolonged or repeated inhalation of respirable silica from this product can cause silicosis.

Skin contact: Causes skin irritation. Handling can cause dry skin, discomfort, irritation, and dermatitis. May cause sensitization by skin contact. Product becomes extremely alkaline when exposed to moisture, and can cause alkali burns and affect the mucous membranes. Precautions must be observed because burns occur with little warning -- little heat is sensed.

Eye Contact: Causes serious eye damage. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva.

Ingestion: May be harmful if swallowed. Ingestion may cause discomfort and/or distress, nausea or vomiting.

4.3 Indication of immediate medical attention and special treatment needed:
Immediately seek medical advice or attention if symptoms are significant or persist.

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SECTION V - FIRE FIGHTING MEASURES

5.1 Flammability of the Product: Non-flammable and non-combustible
5.2 Suitable extinguishing agents: Treat for surrounding material
5.3 Special hazards arising from the substance or mixture: None
5.3a Products of Combustion: None
5.3b Explosion Hazards in Presence of Various Substances: Non-explosive in presence of shocks

SECTION VI – ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures: Wear personal protective equipment (See section VIII). Keep unprotected persons away.

6.2 Methods and material for containment and cleaning up:
Do not allow to enter sewers/ surface or ground water. Dispose of unwanted materials and containers properly in accordance with all regulations.

SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND STORAGE

7.1 Handling
Precautions for safe handling: Ensure good ventilation/exhaustion at the workplace. DO NOT BREATHE DUST. In dusty environments, the use of an OSHA, MSHA or NIOSH approved respirator and tight fitting goggles is recommended. Wear appropriate PPE (See section 8).Do not mix with other chemical products, except as indicated by the manufacturer. Do not get in eyes, on skin or clothing. Good housekeeping is important to prevent accumulation of dust.

7.2 Storage
Requirements to be met by storerooms and receptacles: No special requirements.
Information about storage in one common storage facility: Not required.
Further information about storage conditions: Keep out of the reach of children. Keep container tightly closed and prevent exposure to humidity. Do not allow water to contact the product until time of use to preserve product utility.

SECTION VIII – EXPOSURE CONTROL MEASURES / PERSONAL PROTECTION

8.1 Components with limit values that require monitoring at the workplace:

Hazardous Components	CAS No.	PEL (OSHA) mg/M^3	TLV (ACGIH) mg/M^3
Silica Sand, crystalline	14808-60-7	0.1	0.025 (resp)
Portland Cement	65997-15-1	5 (resp) 15 (total)	10 (resp)
Fly Ash	68131-74-8	N/A	N/A

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8.2 Exposure Controls
Use ventilation adequate to keep exposures below recommended exposure limits.

8.3 General protective and hygienic measures
Keep away from foodstuffs, beverages and feed. Immediately remove all soiled and contaminated clothing. Wash hands before breaks and at the end of work. Avoid contact with the eyes and skin.

8.3a Personal protective equipment

Protection of hands:
Wear gloves of adequate length to offer appropriate skin protection from splashes. Nitrile, Butyl and PVC gloves have been found to offer adequate protection for incidental contact. Precautions must be observed because burns occur with little warning -- little heat is sensed.

Eye protection:
Wear approved eye protection (properly fitted dust- or splash-proof chemical safety glasses.

Respiratory protection:
A NIOSH-approved dust mask or filtering face piece is recommended in poorly ventilated areas or when permissible exposure limits may be exceeded. Respirators should be selected by and used under the direction of a trained health and safety professional, following requirements found in OSHA's respirator standard (29 CFR 1910.134) and ANSI's standard for respiratory protection (Z88.2).

SECTION IX - PHYSICAL/CHEMICAL CHARACTERISTICS

General Information

Appearance	Form: Granular Solid
	Color: Gray to gray-brown colored
	Odor: None
pH-value at 20°C (68 °F):	13 (10%)
Boiling point/Boiling range:	Not applicable
Flash point:	Not applicable
Auto igniting:	Product is not self-igniting
Vapor pressure at 21°C (70°F)	Not available
Density at 25°C (77 °F):	2.6 to 3.15

Solubility in / Miscibility with Water:	Insoluble
VOC content:	0 g/L VOC

SECTION X – STABILITY AND REACTIVITY

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10.1 Reactivity
No dangerous reaction known under conditions of normal use.
10.2 Chemical stability
Stable under normal storage conditions. Keep in dry storage.
10.3 Possibility of hazardous reaction
No dangerous reaction known under conditions of normal use.
10.4 Thermal decomposition / conditions to be avoided
No decomposition if used according to specifications.
10.5 Incompatible materials
Contact of silica with powerful oxidizing agents such as fluorine, chlorine trifluoride, manganese trioxide, or oxygen difluoride may cause fires
10.6 Hazardous Decomposition or By-products
Silica will dissolve in Hydrofluoric Acid and produce a corrosive gas – silicon tetrafluoride.

SECTION XI – TOXICOLOGICAL INFORMATION

11.1 Exposure Routes: Skin contact, skin adsorption, eye contact, inhalation, or ingestion.

11.2 Symptoms related to physical/chemical/toxicological characteristics:

Inhalation: May cause respiratory tract irritation. Causes damage to organs through prolonged or repeated exposure. This product contains crystalline silica. Prolonged or repeated inhalation of respirable silica from this product can cause silicosis.

Skin contact: Causes skin irritation. Handling can cause dry skin, discomfort, irritation, and dermatitis. May cause sensitization by skin contact. Product becomes extremely alkaline when exposed to moisture, and can cause alkali burns and affect the mucous membranes.

Eye Contact: Causes serious eye damage. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva.

Ingestion: Harmful if swallowed. Ingestion may cause discomfort and/or distress, nausea or vomiting.

11.3 Delayed, immediate and chronic effects of short-term and long-term exposure

Short Term

Skin Corrosion/Irritation: Causes severe skin burns.
Serious Eye Damage/Irritation: Causes severe eye damage.
Respiratory Sensitization: Not available
Skin Sensitization: May cause an allergic skin reaction.
Specific Target Organ Toxicity-Single Exposure: (Category 1) Causes respiratory irritation.
Aspiration Hazard: Not available

Long Term

Carcinogenicity: May cause cancer through chronic inhalation.

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Germ Cell Mutagenicity: Not available
Reproductive Toxicity: Not available
Specific Target Organ Toxicity- Repeated Exposure: (Category 1) Causes damage to lungs through prolonged/repeated exposure
Synergistic/Antagonistic Effects: Not available.

SECTION XII – ECOLOGICAL INFORMATION

12.1 Ecotoxicity
May cause long-term adverse effects to the aquatic environment. Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system. Must not reach bodies of water or drainage ditch undiluted or un-neutralized

12.2 Persistence and degradability
No further relevant information available.

12.3 Bioaccumulative potential:
No further relevant information available.

12.4 Mobility in soil
No further relevant information available.

12.5 Other Adverse Effects
No further relevant information available.

SECTION XIII – DISPOSAL CONSIDERATIONS

13.1 Waste Disposal Method
The packaging and material may be land filled; however, material should be covered to minimize generation of airborne dust. This product is not classified as a hazardous waste under the authority of the RCRA (40CFR 261) or CERCLA (40CFR 117&302). Disposal must be made in accordance with local, state and federal regulations.

13.2 Other disposal considerations
Uncleaned packaging
Recommendation: Disposal must be made in accordance with local, state and federal regulations.
Recommended cleansing agent: Water, if necessary with cleansing agents.

SECTION XIV – TRANSPORT INFORMATION

	DOT (U.S.)	TDG (Canada)
UN-Number	Not Regulated	Not Regulated
UN proper shipping name	Not Regulated	Not Regulated
Transport Hazard Class(es)	Not Regulated	Not Regulated

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Packing Group (if applicable)	Not Regulated	Not Regulated

14.1 Environmental hazards:
Not Available

14.2 Transport in bulk according to Annex II of Marpol 73/78 and the IBC Code
Not available

14.3 Special precautions for user
Do not handle until all safety precautions have been read and understood.

SECTION XV – OTHER REGULATORY INFORMATION

15.1 Safety, Health and Environmental Regulations/Legislations specific for the chemical

Canada
WHMIS Classification: Considered to be a hazardous material under the Hazardous Products Act as defined by the Controlled Products Regulations and subject to the requirements of Health Canada's Workplace Hazardous Material Information (WHMIS). This document complies with the WHMIS requirements of the Hazardous Products Act (HPA) and the CPR.

15.2 US Federal Information

SARA 302/311/312/313 Components
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302, 311, 312 or 313.
RCRA: Crystalline silica (quartz) is not classified as a hazardous waste under the Resource Conservation and Recovery Act, or its regulations, 40 CFR §261 et seq.
CERCLA: Crystalline silica (quartz) is not classified as a hazardous substance under regulations of the Comprehensive Environmental Response Compensation and Liability Act (CERCLA), 40 CFR §302.
Emergency Planning and Community Right to Know Act (SARA Title III): Crystalline silica (quartz) is not an extremely hazardous substance under Section 302 and is not a toxic chemical subject to the requirements of Section 313.
FDA: Silica is included in the list of substances that may be included in coatings used in food contact surfaces, 21 CFR §175.300(b)(3)(xxvi).
NTP: Respirable crystalline silica, primarily quartz dusts occurring in industrial and occupational settings, is classified as Known to be a Human Carcinogen.
OSHA Carcinogen: Crystalline silica (quartz) is not listed.

15.3 State Right to Know Laws
California Prop. 65 Components

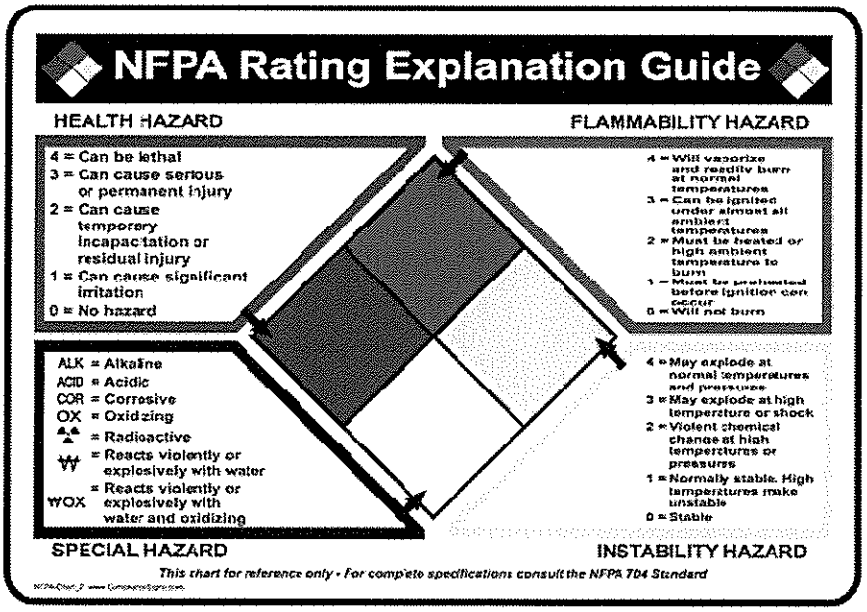
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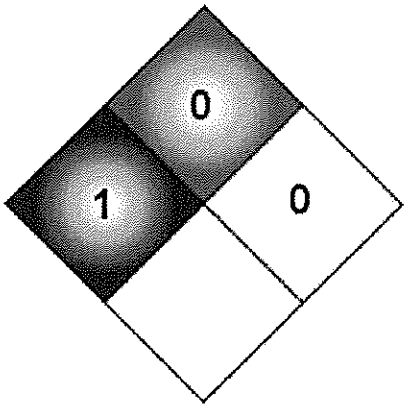
WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.
California Inhalation Reference Exposure Level (REL): California established a chronic REL of 3 µg for silica (crystalline, respirable). A chronic REL is an airborne level of a substance at or below which no adverse health effects are anticipated in individuals indefinitely exposed to the substance at that level.
Massachusetts Toxic Use Reduction Act: Silica, crystalline (respirable size, <10 microns) is "toxic" for purposes of the Massachusetts Toxic Use Reduction Act.

15.4 Global Inventories

DSL All components of this product are on the Canadian DSL list.
TSCA No.: Crystalline silica (quartz) appears on the EPA TSCA inventory under the CAS No. 14808-60-7. All constituents are listed in the TSCA inventory.

15.5 NFPA Ratings





SECTION XVI – OTHER INFORMATION

Last Updated: April 19, 2017

NOTE: The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, express or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by exposure to silica contained in our products.

Prepared by SPEC MIX, Inc.
Phone (888) 773-2649
www.SPECMIX.com

End of SDS

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POWER SERVICE PRODUCTS, INC.
SAFETY DATA SHEET

SECTION 1 - IDENTIFICATION

PRODUCT NAME: DIESEL 9•1•1

Unless otherwise noted, all sections of this MSDS apply to each of the following products and part numbers.

PART NUMBERS:

8016-09, 8025-09, 8025-12, 8080-06, 8050-02, 8055-01, 8260-01 18016-09, 18025-12, 18080-06

COMPANY IDENTIFICATION:

Power Service Products, Inc.
P.O. Box 1089
Weatherford, TX 76086
Email: psp@powerservice.com
Phone: 800/643-9089 or 817-599-9486
Fax: 817-599-4893

Emergency Phone Number: Within USA 1-800-424-9300. Outside USA 001-703-527-3887 (Call Collect).

RECOMMENDED USES: Diesel fuel additive

SECTION 2 - HAZARD(S) IDENTIFICATION

CLASSIFICATION (GHS-CA)

(NC=product does not meet classification criteria)

Health Hazard Criteria	Category
Acute Toxicity, Oral:	NC
Acute Toxicity, Dermal:	NC
Acute Toxicity, Inhalation, Vapours:	NC
Skin Corrosion/Irritation:	2
Serious Eye Damage/Eye Irritation:	2
Respiratory Sensitization:	NC
Skin Sensitization:	NC
Germ Cell Mutagenicity:	NC

Health Hazard Criteria	Category
Carcinogenicity:	NC
Reproductive Toxicity:	NC
Specific Target Organ Toxicity, Single Exposure:	3
Specific Target Organ Toxicity, Repeated or Prolonged Exposure:	NC
Aspiration Hazard:	1

Physical Properties Criteria	Category
Explosives:	NC
Flammable Gases:	NC
Flammable Aerosols:	NC
Oxidizing Gases:	NC
Gases Under Pressure:	NC
Flammable Liquids:	3
Flammable Solids:	NC
Self-Reactive Chemicals:	NC
Pyrophoric Liquids:	NC
Pyrophoric Solids:	NC
Self-Heating Chemicals:	NC
Chemicals Which, in Contact with Water, Emit Flammable Gases:	NC
Oxidizing Liquids:	NC
Oxidizing Solids:	NC
Organic Peroxides:	NC
Corrosive to Metals:	NC

LABEL SIGNAL WORD, HAZARD STATEMENTS, SYMBOLS AND PRECAUTIONARY STATEMENTS ACCORDING TO THE HAZARDOUS PRODUCTS REGULATIONS (FEBRUARY 11, 2015) :

Please see the Note regarding product labeling in Section 16.

Signal Word(s): Danger

Hazard Statement(s): Flammable liquid and vapour. May be fatal if swallowed and enters airways. Causes skin and serious eye irritation. May cause respiratory irritation. May cause drowsiness or dizziness.

Symbols:



Precautionary Statement(s): Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep container tightly closed. Use only non-sparking tools.

Ground/Bond container and receiving equipment. Use explosion-proof pumps when pumping. Take precautionary measures against static discharge. Avoid breathing vapours. Use only outdoors or in a well-ventilated area. Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product. Wear protective gloves and eye protection. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse with water. IF SWALLOWED: Immediately call a POISON CENTER/doctor. IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF IN EYES: Rinse Cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF ON SKIN: Wash with plenty of water. If you feel unwell, or skin/eye irritation persists: get medical advice/attention. Take off contaminated clothing and wash it before reuse. Store locked up and in cool, well-ventilated place. Dispose of contents/container at an approved waste disposal plant. KEEP OUT OF REACH OF CHILDREN.

Hazards Not Otherwise Classified: None

SECTION 3 - COMPOSITION / INFORMATION ON INGREDIENTS

The specific chemical identity and exact concentration percentage has been withheld as proprietary. Specific chemical information will be made available to health professionals in accordance with the Hazardous Products Regulations (February 11, 2015)

INGREDIENTS CLASSIFIED AS HEALTH HAZARDS

Chemical Name	Common Name/Synonyms	CAS Number	Concentration (%)
Aliphatic hydroxy hydrocarbons	Proprietary	Proprietary	40 - 90
Petroleum Distillates	Proprietary	Proprietary	10 - 40

HMIRA Filing #: Pending
HMIRA Registration #: Pending

SECTION 4 - FIRST AID MEASURES

As a precaution, exposure to liquids, vapours, mists and fumes should be minimized.

EYE CONTACT: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical advice.

SKIN CONTACT: Immediately take off contaminated clothing and wash it before reuse. Wash contaminated areas with plenty of water. If skin irritation occurs get medical advice/attention.

INHALATION: Remove person to fresh air and keep comfortable for breathing. Call a doctor if you feel unwell.

INGESTION: If swallowed, IMMEDIATELY call a doctor. Do NOT induce vomiting.

SECTION 5 - FIRE AND EXPLOSION HAZARD DATA

EXTINGUISHING MEDIA: Use water fog, alcohol-resistant foam, dry chemical or carbon dioxide (CO_2) to extinguish flames.

SPECIFIC HAZARDS: Vapours are heavier than air and may travel along the ground to a distant ignition source and flash back. See Section 10 for Stability and Reactivity. **NOTE:** EMPTY CONTAINERS CONTAIN COMBUSTIBLE VAPOURS THAT CAN CAUSE FLASH FIRES OR EXPLOSIONS. CONTAINERS ARE SINGLE-TRIP CONTAINERS AND SHOULD NOT BE USED FOR ANY REASON AFTER BEING EMPTIED. DO NOT USE CUTTING TORCH EQUIPMENT OR ANY OTHER FLAME OR OTHER SOURCES OF IGNITION ON ANY EMPTY CONTAINER.

PROTECTIVE EQUIPMENT AND PRECAUTIONS: Use standard protective equipment including self-contained breathing apparatus (SCBA).

SECTION 6 - ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT, AND EMERGENCY PROCEDURES: Avoid contact with spilled material. Warn or evacuate occupants in surrounding and downwind areas. Eliminate all sources of ignition in the vicinity of the spill or released vapour. See Section 2 for Hazards Identification. See Section 4 for First Aid Measures. See Section 5 for Fire Fighting Information. See Section 8 for Personal Protective Equipment.

SPILL CONTAINMENT AND CLEAN-UP: Eliminate potential sources of ignition. Stop leak if it can be done without risk. Dike and contain spill. Do not touch or walk through spilled material. Prevent entry into waterways, sewer, basements or confined areas. Remove with vacuum trucks or pump to storage/salvage vessels. Soak up residue with an absorbent such as clay, sand or other suitable material and dispose of properly. A vapour suppressing foam may be used to reduce vapours. Local, state and federal laws and/or regulations may apply to releases and disposal of this material, as well as those materials and items employed in the clean-up releases. The user/responder will need to determine which local, state and federal laws and/or regulations are applicable. The National Response Center can be reached at 1-800-424-8802.

SECTION 7 - HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING: Avoid contact with eyes and skin. Use only with adequate ventilation. Use proper bonding and/or grounding procedures. Prevent small spills and leakage to avoid slip hazard. Material can accumulate static charges which may cause an electrical spark (ignition source). Keep away from ignition sources such as heat, sparks, and flames. No smoking.

CONDITIONS FOR SAFE STORAGE: DO NOT USE OR STORE near heat, sparks, or flame. USE AND STORE ONLY IN A WELL-VENTILATED AREA. Handle containers with care. Keep container closed when not in use. Store locked up.

STORAGE TEMPERATURE: -40°F to 100°F (-40°C to 38°C)

EMPTY CONTAINER WARNING: EMPTY CONTAINERS MAY CONTAIN FLAMMABLE VAPOURS AND CAN BE DANGEROUS. SEE SECTION 5 FOR FIRE AND EXPLOSION HAZARD DATA.

SECTION 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Control Parameters:

Aliphatic hydroxy hydrocarbons (Proprietary)		
Canada (Quebec)	PLAFOND (mg/m³)	152 mg/m³
Canada (Quebec)	PLAFOND (ppm)	50 ppm
Alberta	OEL TWA (mg/m³)	60 mg/m³
Alberta	OEL TWA (ppm)	20 ppm
British Columbia	OEL Ceiling (ppm)	30 ppm
British Columbia	OEL TWA (ppm)	15 ppm
Manitoba	OEL TWA (ppm)	20 ppm
New Brunswick	OEL Ceiling (mg/m³)	152 mg/m³
New Brunswick	OEL Ceiling (ppm)	50 ppm
New Foundland & Labrador	OEL TWA (ppm)	20 ppm
Nova Scotia	OEL TWA (ppm)	20 ppm
Nunavut	OEL STEL (ppm)	30 ppm
Nunavut	OEL TWA (ppm)	20 ppm
Northwest Territories	OEL STEL (ppm)	30 ppm
Northwest Territories	OEL TWA (ppm)	20 ppm
Ontario	OEL TWA (ppm)	20 ppm
Prince Edward Island	OEL TWA (ppm)	20 ppm
Saskatchewan	OEL STEL (ppm)	30 ppm
Saskatchewan	OEL TWA (ppm)	20 ppm
Yukon	OEL Ceiling (mg/m³)	150 mg/m³
Yukon	OEL Ceiling (ppm)	50 ppm

Petroleum Distillates (Proprietary)		
British Columbia	OEL TWA (mg/m³)	200 mg/m³ (application restricted to conditions in which there are negligible aerosol exposures)

ENGINEERING CONTROLS: The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Local exhaust ventilation is recommended to control exposure.

PERSONAL PROTECTIVE EQUIPMENT (PPE):

Eyes and Face: Eye protection such as safety glasses or chemical goggles is recommended if contact is likely.

Skin: If prolonged or repeated skin contact is likely, chemical/oil resistant clothing and gloves are recommended. Wear additional protective clothing as appropriate.

Respiratory: Wear a NIOSH/MSHA approved respirator as necessary.

Specific Hygiene Measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Practice good housekeeping.

NOTE: These precautions are for room temperature handling.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Liquid, straw yellow
Odor	Strong solvent
Odor Threshold	Not available
pH	Not applicable
Melting point/Freezing point	Not available
Initial Boiling Point and Boiling Range	187.7°F (86.5°C)
Flash Point	74°F (TCC) 23°C
Evaporation Rate	Not available
Flammability	Not available
Upper / lower Flammability or Explosive Limits	Not available
Vapour Pressure	Not available
Vapour Density	Not available
Relative Density/Specific Gravity (at 60°F)	0.8400
Solubility	Not available
Partition Coefficient; n-octanol / water	Not available
Auto-ignition Temperature	Not available
Decomposition temperature	Not available
Viscosity	Not available
Pour Point	<-159°F (-106°C)

SECTION 10 - STABILITY AND REACTIVITY

REACTIVITY: see Incompatible Materials below

CHEMICAL STABILITY: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

CONDITIONS TO AVOID: Flames, high energy ignition sources, and elevated temperatures.

INCOMPATIBLE MATERIALS: May react with oxygen, oxidizing agents, such as; chlorates, nitrates, peroxides, etc., amines, caustics, alkanolamines halogens, chlorine.

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon oxides, products of incomplete combustion.

HAZARDOUS POLYMERIZATION:
Hazardous polymerization will not occur.

SECTION 11 - TOXICOLOGICAL INFORMATION

LIKELY ROUTES OF EXPOSURE

INGESTION	INHALATION	SKIN CONTACT	EYE CONTACT	SKIN ABSORPTION
	X	X	X	X

SYMPTOMS RELATED TO PHYSICAL, CHEMICAL AND TOXICOLOGICAL CHARACTERISTICS: Breathing of high vapour concentrations may cause dizziness, light-headedness, headache, nausea and loss of coordination. Continued inhalation may result in unconsciousness. The vapour or fumes from this material may cause respiratory irritation. Breathing this material at elevated concentrations causes central nervous system effects. Central nervous system effects may include headache, dizziness, nausea, vomiting, weakness, loss of coordination, blurred vision, drowsiness, confusion or disorientation. At extreme exposures, central nervous system effects may include respiratory depression, tremors, or convulsions, loss of consciousness, coma or death.

DELAYED AND IMMEDIATE EFFECTS AND CHRONIC EFFECTS FROM SHORT- AND LONG-TERM EXPOSURE: Repeated skin exposure to a component of this product may cause irritation, even a burn; may cause a more severe response on covered skin, such as under clothing or gloves. Inhalation exposure to a component of this product has caused fetotoxicity in the presence of maternal toxicity in animals.

NUMERICAL MEASURES OF TOXICITY
Note: the information provided below are estimates; testing of the product is not available.

Acute Oral Toxicity (ATE_{mix} estimate)	Acute Dermal Toxicity (ATE_{mix} estimate)	Acute Inhalation (ATE_{mix} estimate)
Does not meet criteria	Does not meet criteria	Does not meet criteria

SENSITIZATION: No information available.

MUTAGENICITY: No information available.

CARCINOGENICITY: This product contains a component of a complex mixture that contains impurities that have been shown to cause carcinogenicity.

REPODUCTIVE TOXICITY: No information available.

TERATOGENICITY/EMBRYOTOXICITY: This product contains a component of a complex mixture that contains impurities that have been shown to cause teratogenicity and/or embryotoxicity.

SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE): Respiratory tract irritation.

SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE): No information available

ASPIRATION HAZARD: Aspiration hazard identified.

SECTION 12 - ECOLOGICAL INFORMATION

ECOTOXICITY: This material is expected to be toxic to aquatic organisms.

PERSISTENCE AND DEGRADABILITY: No information available.

BIOACCUMULATIVE POTENTIAL: No information available.

MOBILITY IN SOIL: No information available.

OTHER ADVERSE EFFECTS: No information available.

SECTION 13 - DISPOSAL CONSIDERATIONS

Disposal of unused product may be subject to hazardous waste regulations. Disposal of the used product may also be regulated as hazardous waste due to resulting mixture characteristics, mixture components or product use. Provincial or local laws may impose additional regulatory requirements regarding disposal. *Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator.*

EMPTY CONTAINER WARNING: EMPTY CONTAINERS MAY CONTAIN FLAMMABLE VAPOURS AND CAN BE DANGEROUS. SEE SECTION 5 FOR FIRE AND EXPLOSION HAZARD DATA.

SECTION 14 - TRANSPORTATION INFORMATION

The following part numbers are classified as Limited Quantities:

8016-09, 8025-09, 8025-12, 8080-06, 18016-09, 18025-12, 18080-06

The following part numbers are regulated by TDGR:

8050-02, 8055-01, 8260-01

PROPER SHIPPING NAME: Flammable Liquid, N.O.S., (Aliphatic Hydroxy Hydrocarbons)
HAZARD CLASS: 3
I.D. NUMBER: UN 1993
PACKING GROUP: III
PLACARDING: Flammable Liquid

Air shipment is not recommended.

SECTION 15 - REGULATORY INFORMATION

§14(a) Consumer Product Safety Act General Certificate of Conformity

Power Service Products, Inc. confirms that all proprietary ingredients are listed on the Canadian DSL (Domestic Substances List).

All chemical substances found in this product comply with the Toxic Substances Control Act inventory reporting requirements.

The Power Service products are manufactured in the United States in Weatherford, Texas, unless otherwise indicated on the product label. The product manufacture lot code is stamped on the product container. This Certification is based upon a reasonable testing program conducted by Power Service Products, Inc. which includes a quality control program incorporating, as necessary, confirmation of compliance by component suppliers. Third-party testing is not required to certify compliance. Further details may be obtained by contacting the Power Service Products, Inc. EHS Manager at 1-800-643-9089.

Contents of this SDS comply with the Hazard Products Regulations (February 11, 2015)

Provincial or local laws may impose additional regulatory requirements for components of this material. It is the responsibility solely of the Employer to maintain compliance with provincial and local reporting.

SECTION 16 – OTHER INFORMATION

DATE OF PREPARATION / REVISION: May 31, 2018

The information contained herein is offered in good faith and is believed to be accurate based on the data available to us as of the date of SDS preparation. The information in this document applies to this specific product as supplied. It may not be appropriate for this product if the product is used in combination with other materials. The information in this document is not intended to constitute product performance information. Some of the information presented and conclusions drawn herein are from sources other than direct test data on the product. No statement shall be construed as an endorsement of any product or process. The recommended industrial hygiene and safe handling procedures are believed to be valid in the context of the intended use as

described in product labeling. However, each user should review these recommendations in the specific context of the intended use and determine whether they are appropriate. You are urged to obtain safety data sheets for all products you buy, process, use or distribute, and are encouraged to advise those who may come in contact with such products of the information contained therein. Regulatory requirements are subject to change and may differ between locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. No warranty or guarantee is expressed or implied with respect to this product, the accuracy and sufficiency of the data or recommendations herein, or the results to be obtained from the use of this product. IN NO EVENT SHALL POWER SERVICE PRODUCTS, INC. BE LIABLE FOR ANY LOSS, CLAIM, DAMAGE OR LIABILITY OF ANY KIND, WHICH MAY ARISE FROM OR IN CONNECTION WITH THE INFORMATION CONTAINED IN THIS DOCUMENT OR FROM THE USE, HANDLING OR STORAGE OF THE PRODUCT BY THE BUYER/USER, WHETHER DIRECT, INDIRECT, OR CONSEQUENTIAL, OR FOR ANY CLAIM BY ANY THIRD PARTY, BEYOND THE PURCHASE PRICE OR REPLACEMENT OF THE PRODUCT IN CONNECTION WITH WHICH SUCH LOSS, CLAIM, DAMAGE OR LIABILITY AROSE.

THE FOREGOING LIMITATIONS APPLY REGARDLESS OF THE CAUSES OR CIRCUMSTANCES GIVING RISE TO SUCH LOSS, CLAIM, DAMAGE OR LIABILITY, EVEN IF SUCH LOSS, CLAIM, DAMAGE, OR LIABILITY IS BASED ON NEGLIGENCE OR OTHER TORTS OR BREACH OF CONTRACT.

GRAYMONT

SAFETY DATA SHEET

DOLOMITIC HYDRATED LIME

Section 1. Identification

GHS product identifier : DOLOMITIC HYDRATED LIME

Other means of identification : Hydrated dolomitic lime ($Ca(OH)_2MgO$), Double hydrated dolomitic lime ($CaMg(OH)_4$)

Product code : Not available.

Product type : Solid.

Identified uses

Neutralization, flocculation, stabilization, polishing, masonry mortar, plaster, stucco, fresco paints and lime wash.

Supplier/Manufacturer : GRAYMONT
#200-10991 Shellbridge Way
Richmond, BC V6X 3C6
Canada
Phone: 1 604 207-4292
Toll free : 1 866 207-4292
Fax: 1 604 207-9014
Web Site: http://www.graymont.com/

Emergency telephone number (with hours of operation) : CANUTEC (613-996-6666)
CHEMTREC, US (800-424-9300
INTERNATIONAL: (703-527-3887)

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : SKIN CORROSION/IRRITATION - Category 2
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1
CARCINOGENICITY (inhalation) - Category 1A
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1

GHS label elements

Hazard pictograms :



Signal word : Danger

Hazard statements : H318 - Causes serious eye damage.
H315 - Causes skin irritation.
H350 - May cause cancer if inhaled.
H335 - May cause respiratory irritation.
H372 - Causes damage to organs through prolonged or repeated exposure.

Precautionary statements

Section 2. Hazards identification

Prevention : P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P281 - Use personal protective equipment as required.
P280 - Wear protective gloves. Wear eye or face protection.
P271 - Use only outdoors or in a well-ventilated area.
P260 - Do not breathe dust.
P270 - Do not eat, drink or smoke when using this product.
P264 - Wash hands thoroughly after handling.

Response : P314 - Get medical attention if you feel unwell.
P308 + P313 - IF exposed or concerned: Get medical attention.
P304 + P340 + P312 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or physician if you feel unwell.
P302 + P352 + P362 + P363 - IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing. Wash contaminated clothing before reuse.
P332 + P313 - If skin irritation occurs: Get medical attention.
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Storage : P401 - Store to minimize dust generation.

Disposal : P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazards not otherwise classified (HNOC)

Physical hazards not otherwise classified (PHNOC) : None known.

Health hazards not otherwise classified (HHNOC) : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Other means of identification : Hydrated dolomitic lime ($Ca(OH)_2MgO$), Double hydrated dolomitic lime ($CaMg(OH)_4$)

CAS number/other identifiers

CAS number : Not applicable.

Product code : Not available.

Ingredient name	%	CAS number
Calcium Magnesium Tetrahydroxide	60 - 100	39445-23-3
Calcium Magnesium Dihydroxide Oxide	60 - 100	58398-71-3
Calcium Hydroxide	30 - 60	1305-62-0
Crystalline silica, quartz	0.0001 - 1	14808-60-7

Crystalline silica has been found in some products at or above detection level 0.1%. Concentration is dependent upon limestone source.

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 20 minutes. Chemical burns must be treated promptly by a physician. Get medical attention immediately. Call a poison center or physician.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Skin contact : Get medical attention immediately. Call a poison center or physician. Flush contaminated skin with plenty of water. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 20 minutes. Chemical burns must be treated promptly by a physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Causes serious eye damage.

Inhalation : May cause respiratory irritation.

Skin contact : Causes skin irritation.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
pain
watering
redness

Inhalation : Adverse symptoms may include the following:
respiratory tract irritation
coughing
burning sensation

Skin contact : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur

Ingestion : Adverse symptoms may include the following:
burning sensation
abdominal cramps and pain
vomiting

Section 4. First aid measures

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : No specific fire or explosion hazard.

Hazardous thermal decomposition products : None.

Special protective actions for fire-fighters : No special measures are required.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Spill : Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store to minimize dust generation. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

United States

Occupational exposure limits

Ingredient name	Exposure limits
Calcium Hydroxide	**OSHA PEL (United States, 2/2013).** TWA: 5 mg/m³ 8 hours. Form: Respirable fraction TWA: 15 mg/m³ 8 hours. Form: Total dust **ACGIH TLV (United States, 4/2014).** TWA: 5 mg/m³ 8 hours. **NIOSH REL (United States, 10/2013).** TWA: 5 mg/m³ 10 hours. **MSHA PEL** TWA 8/40 hours: 5 mg/m^3
Crystalline silica, quartz	**OSHA PEL Z3 (United States, 2/2013).** TWA: 10 mg/m³ 8 hours. Form: Respirable TWA: 250 mppcf 8 hours. Form: Respirable **NIOSH REL (United States, 10/2013).** TWA: 0.05 mg/m³ 10 hours. Form: Respirable dust **ACGIH TLV (United States, 4/2014).** TWA: 0.025 mg/m³ 8 hours. Form: Respirable fraction **MSHA PEL** TWA 8/40 hours: 30 mg/m^3/(%SiO2)+2 mg/m³ Form: Total dust 10 mg/m^3/(%SiO2)+2 mg/m³ Form: Respirable dust

Canada

Occupational exposure limits		TWA (8 hours)			STEL (15 mins)			Ceiling			
Ingredient	List name	ppm	mg/m³	Other	ppm	mg/m³	Other	ppm	mg/m³	Other	Notations
Magnesium oxide	US ACGIH 4/2014	-	10	-	-	-	-	-	-	-	[a]
	AB 4/2009	-	10	-	-	-	-	-	-	-	[b]
	BC 7/2013	-	10	-	-	-	-	-	-	-	[c]
		-	3	-	-	10	-	-	-	-	[d]
Magnesium oxide, Mg	ON 1/2013	-	10	-	-	-	-	-	-	-	[a]
Magnesium oxide, as Mg	QC 1/2014	-	10	-	-	-	-	-	-	-	[b]
Calcium dihydroxide	US ACGIH 4/2014	-	5	-	-	-	-	-	-	-	
	AB 4/2009	-	5	-	-	-	-	-	-	-	[3]
	BC 7/2013	-	5	-	-	-	-	-	-	-	
	ON 1/2013	-	5	-	-	-	-	-	-	-	

Section 8. Exposure controls/personal protection

Crystalline silica, quartz	QC 1/2014	-	5	-	-	-	-	-	-	-	
	US ACGIH 4/2014	-	0.025	-	-	-	-	-	-	-	[e]
	AB 4/2009	-	0.025	-	-	-	-	-	-	-	[f]
	BC 7/2013	-	0.025	-	-	-	-	-	-	-	[g]
	ON 1/2013	-	0.1	-	-	-	-	-	-	-	[e]
	QC 1/2014	-	0.1	-	-	-	-	-	-	-	[h]

[3]Skin sensitization

Form: [a]Inhalable fraction [b]Fume [c]Inhalable fume [d]Respirable dust and fume. [e]Respirable fraction [f]Respirable particulate. [g]Respirable [h]Respirable dust

Appropriate engineering controls : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. Engineering controls may be required to control the primary or secondary risks associated with this product.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Wear an appropriate NIOSH approved respirator if concentration levels exceed the safe exposure limits.

Section 9. Physical and chemical properties

Appearance

Physical state : Solid. [Fine powder.]

Color : White.

Odor : Sweet, soil like odor.

Odor threshold : Not available.

pH : 12.45 [Sat. soln.] at 25°C

Melting point : Not available.

Boiling point : Not available.

Flash point : Not applicable.

Evaporation rate : Not available.

Flammability (solid, gas) : Not applicable.

Lower and upper explosive (flammable) limits : Not applicable.

Vapor pressure : Not available.

Vapor density : Not available.

Relative density : 2.2 to 2.6

Solubility : Not available.

Solubility in water : 0.1 g/100 g at 20°C

Partition coefficient: n-octanol/water : Not available.

Auto-ignition temperature : Not applicable.

Decomposition temperature : 345°C (653°F)

Viscosity : Not available.

Volatility : Not available.

VOC (w/w) : 0 % (w/w)

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : None.

Conditions to avoid : Do not allow quicklime to come into contact with incompatible materials. e.g. Water, acids, reactive fluoridated compounds, reactive brominated compounds. reactive powered metals, organic acid anhydrides, nitro-organic compounds, reactive phosphorous compounds, interhalogenated compounds.

Incompatible materials : Reactive or incompatible with the following materials: oxidizing materials and acids.

Hazardous decomposition products : None.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Calcium Hydroxide	LD50 Oral	Rat	7340 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Calcium Hydroxide	Eyes - Severe irritant	Rabbit	-	10 mg	-

Sensitization

There is no data available.

Carcinogenicity

Classification

Product/ingredient name	OSHA	IARC	NTP	ACGIH	EPA	NIOSH
Magnesium oxide Crystalline silica, quartz	- -	- 1	- Known to be a human carcinogen.	A4 A2	- -	- +

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Calcium Magnesium Tetrahydroxide Calcium Magnesium Dihydroxide Oxide Calcium Hydroxide	Category 3 Category 3 Category 3	Not applicable. Not applicable. Not applicable.	Respiratory tract irritation Respiratory tract irritation Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
Crystalline silica, quartz	Category 1	Inhalation	kidneys, respiratory tract and testes

Aspiration hazard

There is no data available.

Information on the likely routes of exposure : Dermal contact. Eye contact. Inhalation. Ingestion.

Potential acute health effects

Eye contact : Causes serious eye damage.

Inhalation : May cause respiratory irritation.

Skin contact : Causes skin irritation.

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:
pain
watering
redness

Inhalation : Adverse symptoms may include the following:
respiratory tract irritation
coughing
burning sensation

Section 11. Toxicological information

Skin contact : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur

Ingestion : Adverse symptoms may include the following:
burning sensation
abdominal cramps and pain
vomiting

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : No known significant effects or critical hazards.

Potential delayed effects : No known significant effects or critical hazards.

Long term exposure

Potential immediate effects : No known significant effects or critical hazards.

Potential delayed effects : No known significant effects or critical hazards.

Potential chronic health effects

General : Causes damage to organs through prolonged or repeated exposure.

Carcinogenicity : May cause cancer if inhaled. Risk of cancer depends on duration and level of exposure.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

There is no data available.

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Calcium Hydroxide	Acute LC50 33884.4 µg/L Fresh water	Fish - Clarias gariepinus - Fingerling	96 hours

Persistence and degradability

There is no data available.

Bioaccumulative potential

There is no data available.

Mobility in soil

Soil/water partition coefficient (K_{OC}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling empty containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT	TDG	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-	-
Transport hazard class(es)	-	-	-	-
Packing group	-	-	-	-
Environmental hazards	No.	No.	No.	No.
Additional information	-	-	-	-

AERG : Not applicable.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not available.

Section 15. Regulatory information

U.S. Federal regulations : **TSCA 8(a) CDR Exempt/Partial exemption**: Not determined

United States inventory (TSCA 8b): Dolomitic Hydrated Lime is subject to inventory update reporting (IUR).

RCRA classification: Dolomitic Hydrated Lime is not listed or classified.

CWA-311: Dolomitic Hydrated Lime is not listed.

CERCLA: Dolomitic Hydrated Lime is not listed.

FDA: Not applicable

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Not listed

Section 15. Regulatory information

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Immediate (acute) health hazard
Delayed (chronic) health hazard

Composition/information on ingredients

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Calcium Magnesium Tetrahydroxide	60 - 100	No.	No.	No.	Yes.	No.
Calcium Magnesium Dihydroxide Oxide	60 - 100	No.	No.	No.	Yes.	No.
Calcium Hydroxide	30 - 60	No.	No.	No.	Yes.	No.
Crystalline silica, quartz	0.0001 - 1	No.	No.	No.	No.	Yes.

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	Not listed	-	-
Supplier notification	Not listed	-	-

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

Massachusetts : The following components are listed: Magnesium oxide; Calcium Hydroxide; Crystalline silica, quartz

New York : None of the components are listed.

New Jersey : The following components are listed: Magnesium oxide; Calcium Hydroxide; Crystalline silica, quartz

Pennsylvania : The following components are listed: Magnesium oxide; Calcium Hydroxide; Crystalline silica, quartz

California Prop. 65

WARNING: This product contains a chemical known to the State of California to cause cancer.

Ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
Crystalline silica, quartz	Yes.	No.	No.	No.

Section 15. Regulatory information

Canada

Canadian lists

Canadian NPRI : None of the components are listed.

CEPA Toxic substances : None of the components are listed.

Canada inventory : At least one component is not listed in DSL but all such components are listed in NDSL.

International lists

National inventory

Australia : Not determined.

China : All components are listed or exempted.

Europe : All components are listed or exempted.

Japan : Not determined.

Malaysia : Not determined.

New Zealand : Not determined.

Philippines : Not determined.

Republic of Korea : All components are listed or exempted.

Taiwan : Not determined.

Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health : 3 * **Flammability :** 0 **Physical hazards :** 1

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.)

Health : 3 **Flammability :** 0 **Instability :** 1

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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

History

Date of issue mm/dd/yyyy : 04/15/2015

Version : 1

Prepared by : KMK Regulatory Services Inc.

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United Nations

Section 16. Other information

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Material Safety Data Sheet
The Dow Chemical Company

Product Name: ENERFOAM(TM) ENER42 26oz HC Foam Sealant AUS **Issue Date:** 02/16/2010

Print Date: 17 Feb 2010

The Dow Chemical Company encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

1. Product and Company Identification

Product Name
ENERFOAM™ ENER42 26oz HC Foam Sealant AUS

COMPANY IDENTIFICATION
The Dow Chemical Company
2030 Willard H. Dow Center
Midland, MI 48674
USA

Customer Information Number: 800-258-2436

EMERGENCY TELEPHONE NUMBER
24-Hour Emergency Contact: 989-636-4400
Local Emergency Contact: 989-636-4400

2. Hazards Identification

Emergency Overview
Color: Off-white
Physical State: Foam
Odor: Odorless
Hazards of product:

DANGER! May cause allergic skin reaction. Harmful if inhaled. May cause allergic respiratory reaction. May cause eye irritation. May cause skin irritation. May cause lung injury. Vapor reduces oxygen available for breathing. May cause anesthetic effects. May cause respiratory tract irritation. May react with water. Evacuate area. Keep upwind of spill. Stay out of low areas. Warn public of downwind explosion hazard. Elevated temperatures can cause hazardous polymerization. Material reacts slowly with water, releasing carbon dioxide which can cause pressure buildup and rupture of closed containers. Elevated temperatures accelerate this reaction. Toxic fumes may be released in fire situations. Flammable gas - May cause flash fire. Contents under pressure. Avoid temperatures above 105F (41C).

OSHA Hazard Communication Standard

®(TM)*Trademark of The Dow Chemical Company ("Dow") or an affiliated company of Dow

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Potential Health Effects

Eye Contact: May cause eye irritation. May cause slight temporary corneal injury.
Skin Contact: Prolonged contact may cause moderate skin irritation with local redness. Material may stick to skin causing irritation upon removal. May stain skin.
Skin Absorption: Prolonged skin contact is unlikely to result in absorption of harmful amounts.
Skin Sensitization: Skin contact may cause an allergic skin reaction. Animal studies have shown that skin contact with isocyanates may play a role in respiratory sensitization.
Inhalation: In confined or poorly ventilated areas, vapor can easily accumulate and can cause unconsciousness and death due to displacement of oxygen. Excessive exposure may cause irritation to upper respiratory tract (nose and throat) and lungs. May cause pulmonary edema (fluid in the lungs.) Effects may be delayed. May cause central nervous system depression. Symptoms of excessive exposure may be anesthetic or narcotic effects; dizziness and drowsiness may be observed. Excessive exposure may increase sensitivity to epinephrine and increase myocardial irritability (irregular heartbeats). Decreased lung function has been associated with overexposure to isocyanates.
Respiratory Sensitization: May cause allergic respiratory response. MDI concentrations below the exposure guidelines may cause allergic respiratory reactions in individuals already sensitized. Asthma-like symptoms may include coughing, difficult breathing and a feeling of tightness in the chest. Occasionally, breathing difficulties may be life threatening.
Ingestion: Low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury. Observations in animals include: Gastrointestinal irritation.
Effects of Repeated Exposure: Tissue injury in the upper respiratory tract and lungs has been observed in laboratory animals after repeated excessive exposures to MDI/polymeric MDI aerosols. For the minor component(s): In animals, effects have been reported on the following organs: Kidney. Liver.
Cancer Information: Lung tumors have been observed in laboratory animals exposed to respirable aerosol droplets of MDI/Polymeric MDI (6 mg/m3) for their lifetime. Tumors occurred concurrently with respiratory irritation and lung injury. Current exposure guidelines are expected to protect against these effects reported for MDI.
Birth Defects/Developmental Effects: In laboratory animals, MDI/polymeric MDI did not cause birth defects; other fetal effects occurred only at high doses which were toxic to the mother.

3. Composition Information

Component	CAS #	Amount
Isocyanic acid, polymethylenepolyphenylene ester, polymer with .alpha.,.alpha.',.alpha."-1,2,3-propanetriyltris[.omega.-hydroxypoly	57029-46-6	>= 30.0 - <= 60.0 %
Polymethylenepolyphenyl polyisocyanate, polypropyleneglycol copolymer	53862-89-8	>= 5.0 - <= 10.0 %
Diphenylmethane Diisocyanate, isomers and homologues	9016-87-9	>= 10.0 - <= 30.0 %
Paraffin waxes and Hydrocarbon waxes, chlorinated	63449-39-8	>= 5.0 - <= 10.0 %
Isobutane	75-28-5	>= 3.0 - <= 7.0 %
Propane	74-98-6	>= 1.0 - <= 5.0 %
Methyl ether	115-10-6	>= 1.0 - <= 5.0 %
4,4' -Methylenediphenyl diisocyanate	101-68-8	>= 7.0 - <= 13.0 %

Note: CAS 101-68-8 is an MDI isomer that is part of CAS 9016-87-9.

4. First-aid measures

Eye Contact: Immediately flush eyes with water; remove contact lenses, if present, after the first 5 minutes, then continue flushing eyes for at least 15 minutes. Obtain medical attention without delay, preferably from an ophthalmologist.
Skin Contact: Remove material from skin immediately by washing with soap and plenty of water. Remove contaminated clothing and shoes while washing. Seek medical attention if irritation persists. Wash clothing before reuse. An MDI skin decontamination study demonstrated that cleaning very soon after exposure is important, and that a polyglycol-based skin cleanser or corn oil may be more effective than soap and water. Discard items which cannot be decontaminated, including leather articles such as shoes, belts and watchbands.
Inhalation: Move person to fresh air. If not breathing, give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask, etc). If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility.
Ingestion: If swallowed, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.
Notes to Physician: Maintain adequate ventilation and oxygenation of the patient. May cause respiratory sensitization or asthma-like symptoms. Bronchodilators, expectorants and antitussives may be of help. Treat bronchospasm with inhaled beta2 agonist and oral or parenteral corticosteroids. Respiratory symptoms, including pulmonary edema, may be delayed. Persons receiving significant exposure should be observed 24-48 hours for signs of respiratory distress. Exposure may increase "myocardial irritability". Do not administer sympathomimetic drugs such as epinephrine unless absolutely necessary. If you are sensitized to diisocyanates, consult your physician regarding working with other respiratory irritants or sensitizers. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.
Medical Conditions Aggravated by Exposure: Excessive exposure may aggravate preexisting asthma and other respiratory disorders (e.g. emphysema, bronchitis, reactive airways dysfunction syndrome).
Emergency Personnel Protection: First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

5. Fire Fighting Measures

Extinguishing Media: Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Do not use direct water stream. Straight or direct water streams may not be effective to extinguish fire. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.
Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Stay upwind. Keep out of low areas where gases (fumes) can accumulate. Water may not be effective in extinguishing fire. Do not use direct water stream. May spread fire. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Eliminate ignition sources. Move container from fire area if this is possible without hazard. Use water spray to cool fire-exposed containers and fire-affected zone until fire is out.
Special Protective Equipment for Firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.
Unusual Fire and Explosion Hazards: Contains flammable propellant. Aerosol cans exposed to fire can rupture and become flaming projectiles. Propellant release may result in a fireball. Vapors are heavier than air and may travel a long distance and accumulate in low lying areas. Ignition and/or flash back may occur. Dense smoke is produced when product burns.
Hazardous Combustion Products: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Nitrogen oxides. Isocyanates. Hydrogen chloride. Carbon monoxide. Carbon dioxide. Hydrogen cyanide.

6. Accidental Release Measures

Steps to be Taken if Material is Released or Spilled: Contain spilled material if possible. Absorb with materials such as: Sawdust. Dirt. Vermiculite. Sand. Clay. Cob grit. Milsorb®. Do NOT use absorbent materials such as: Cement powder (Note: may generate heat). Collect in suitable and properly labeled open containers. Do not place in sealed containers. Suitable containers include: Metal drums. Plastic drums. Polylined fiber pacs. Wash the spill site with large quantities of water. Attempt to neutralize by adding suitable decontaminant solution: Formulation 1: sodium carbonate 5 - 10%; liquid detergent 0.2 - 2%; water to make up to 100%, OR Formulation 2: concentrated ammonia solution 3 - 8%; liquid detergent 0.2 - 2%; water to make up to 100%. If ammonia is used, use good ventilation to prevent vapor exposure. Pump with explosion-proof equipment. If available, use foam to smother or suppress. Contact Dow for clean-up assistance. See Section 13, Disposal Considerations, for additional information.
Personal Precautions: Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection. Evacuate area. Refer to Section 7, Handling, for additional precautionary measures. Keep personnel out of low areas. Keep personnel out of confined or poorly ventilated areas. Keep upwind of spill. Ventilate area of leak or spill. No smoking in area. Only trained and properly protected personnel must be involved in clean-up operations. Confined space entry procedures must be followed before entering the area. If available, use foam to suppress vapors. Eliminate all sources of ignition in vicinity of spill or released vapor to avoid fire or explosion. Ground and bond all containers and handling equipment. For large spills, warn public of downwind explosion hazard. Check area with combustible gas detector before reentering area. Ground and bond all containers and handling equipment. Vapor explosion hazard. Keep out of sewers. See Section 10 for more specific information.
Environmental Precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information. Spills or discharge to natural waterways is likely to kill aquatic organisms.

7. Handling and Storage

Handling

General Handling: Keep away from heat, sparks and flame. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated contact with skin. Wash thoroughly after handling. Use only with adequate ventilation. Avoid breathing vapor. Keep container closed. Never use air pressure for transferring product. No smoking, open flames or sources of ignition in handling and storage area. Electrically bond and ground all containers and equipment before transfer or use of material. Containers, even those that have been emptied, can contain vapors. Do not cut, drill, grind, weld, or perform similar operations on or near empty containers. Use of non-sparking or explosion-proof equipment may be necessary, depending upon the type of operation. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION. This product is a poor conductor of electricity and can become electrostatically charged, even in bonded or grounded equipment. If sufficient charge is accumulated, ignition of flammable mixtures can occur. Handling operations that can promote accumulation of static charges include but are not limited to mixing, filtering, pumping at high flow rates, splash filling, creating mists or sprays, tank and container filling, tank cleaning, sampling, gauging, switch loading, vacuum truck operations.

Storage

Store in a dry place. Protect from atmospheric moisture. Flammable mixtures may exist within the vapor space of containers at room temperature. Minimize sources of ignition, such as static build-up, heat, spark or flame. Maintain a nitrogen atmosphere. Do not store product contaminated with water to prevent potential hazardous reaction. See Section 10 for more specific information.

Storage Period:	Storage temperature:
12 Months	20 - 30 °C

8. Exposure Controls / Personal Protection

Exposure Limits

Component	List	Type	Value
4,4' -Methylenediphenyl diisocyanate	ACGIH	TWA	0.005 ppm
	OSHA Table Z-1	Ceiling	0.2 mg/m3 0.02 ppm
Methyl ether	AIHA WEEL	TWA	1,880 mg/m3 1,000 ppm
Isobutane	ACGIH	TWA	1,000 ppm
Propane	OSHA Table Z-1	PEL	1,800 mg/m3 1,000 ppm
	ACGIH	TWA	1,000 ppm

Personal Protection

Eye/Face Protection: Use safety glasses (with side shields).
Skin Protection: Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

Hand protection: Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Butyl rubber. Chlorinated polyethylene. Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Examples of acceptable glove barrier materials include: Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Viton. Polyvinyl chloride ("PVC" or "vinyl"). NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Respiratory Protection: Atmospheric levels should be maintained below the exposure guideline. When atmospheric levels may exceed the exposure guideline, use an approved air-purifying respirator equipped with an organic vapor sorbent and a particle filter. For situations where the atmospheric levels may exceed the level for which an air-purifying respirator is effective, use a positive-pressure air-supplying respirator (air line or self-contained breathing apparatus). For emergency response or for situations where the atmospheric level is unknown, use an approved positive-pressure self-contained breathing apparatus or positive-pressure air line with auxiliary self-contained air supply. In confined or poorly ventilated areas, use an approved self-contained breathing apparatus or positive pressure air line with auxiliary self-contained air supply. The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.
Ingestion: Use good personal hygiene. Do not consume or store food in the work area. Wash hands before smoking or eating.

Engineering Controls

Ventilation: Use only with adequate ventilation. Local exhaust ventilation may be necessary for some operations. Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines. Exhaust systems should be designed to move the air away from the source of vapor/aerosol generation and people working at this point. The odor and irritancy of this material are inadequate to warn of excessive exposure.

9. Physical and Chemical Properties

Physical State	Foam
Color	Off-white
Odor	Odorless
Odor Threshold	No test data available
Flash Point - Closed Cup	-104 °C (-155 °F) *Estimated.* Flammable gas.
Flammability (solid, gas)	No

Flammable Limits In Air	**Lower**: No test data available **Upper**: No test data available
Autoignition Temperature	No test data available
Vapor Pressure	6,000 hPa Container is under pressure.
Boiling Point (760 mmHg)	Not applicable.
Vapor Density (air = 1)	No test data available
Specific Gravity (H2O = 1)	1.06 *Calculated*
Freezing Point	No test data available
Melting Point	No test data available
Solubility in water (by weight)	Insoluble
pH	Not applicable
Molecular Weight	No test data available
Decomposition Temperature	No test data available
Partition coefficient, n-octanol/water (log Pow)	No test data available
Evaporation Rate (Butyl Acetate = 1)	No test data available
Kinematic Viscosity	Not applicable

10. Stability and Reactivity

Stability/Instability
Stable under recommended storage conditions. See Storage, Section 7. Unstable at elevated temperatures.
Conditions to Avoid: Avoid temperatures above 50 °C (122 °F). Elevated temperatures can cause container to vent and/or rupture. Exposure to elevated temperatures can cause product to decompose.

Incompatible Materials: Avoid contact with: Acids. Alcohols. Amines. Ammonia. Bases. Metal compounds. Strong oxidizers. Products based on diisocyanates like TDI and MDI react with many materials to release heat. The reaction rate increases with temperature as well as with increased contact; these reactions can become violent. Contact is increased by stirring or if the other material acts as a solvent. Products based on diisocyanates such as TDI and MDI are not soluble in water and will sink to the bottom, but react slowly at the interface. The reaction forms carbon dioxide gas and a layer of solid polyurea. Reaction with water will generate carbon dioxide and heat.

Hazardous Polymerization
Can occur. Elevated temperatures can cause hazardous polymerization.

Thermal Decomposition
Decomposition products depend upon temperature, air supply and the presence of other materials. Toxic gases are released during decomposition.

11. Toxicological Information

Acute Toxicity
Ingestion
Single dose oral LD50 has not been determined. Estimated. LD50, Rat > 10,000 mg/kg
Dermal
The dermal LD50 has not been determined.
Inhalation
The LC50 has not been determined.
Serious eye damage/eye irritation

May cause eye irritation. May cause slight temporary corneal injury.

Skin corrosion/irritation

Prolonged contact may cause moderate skin irritation with local redness. Material may stick to skin causing irritation upon removal. May stain skin.

Sensitization

Skin

Skin contact may cause an allergic skin reaction. Animal studies have shown that skin contact with isocyanates may play a role in respiratory sensitization.

Respiratory

May cause allergic respiratory response. MDI concentrations below the exposure guidelines may cause allergic respiratory reactions in individuals already sensitized. Asthma-like symptoms may include coughing, difficult breathing and a feeling of tightness in the chest. Occasionally, breathing difficulties may be life threatening.

Repeated Dose Toxicity

Tissue injury in the upper respiratory tract and lungs has been observed in laboratory animals after repeated excessive exposures to MDI/polymeric MDI aerosols. For the minor component(s): In animals, effects have been reported on the following organs: Kidney. Liver.

Chronic Toxicity and Carcinogenicity

Lung tumors have been observed in laboratory animals exposed to respirable aerosol droplets of MDI/Polymeric MDI (6 mg/m3) for their lifetime. Tumors occurred concurrently with respiratory irritation and lung injury. Current exposure guidelines are expected to protect against these effects reported for MDI.

Developmental Toxicity

In laboratory animals, MDI/polymeric MDI did not cause birth defects; other fetal effects occurred only at high doses which were toxic to the mother.

Reproductive Toxicity

No relevant information found.

Genetic Toxicology

In vitro genetic toxicity studies were negative for component(s) tested. Genetic toxicity data on MDI are inconclusive. MDI was weakly positive in some in vitro studies; other in vitro studies were negative. Animal mutagenicity studies were predominantly negative.

12. Ecological Information

ENVIRONMENTAL FATE

Data for Component: **Isocyanic acid, polymethylenepolyphenylene ester, polymer with .alpha.,.alpha.',.alpha.''-1,2,3-propanetriyltris[.omega.-hydroxypoly**

Movement & Partitioning

In the aquatic and terrestrial environment, movement is expected to be limited by its reaction with water forming predominantly insoluble polyureas.

Persistence and Degradability

In the aquatic and terrestrial environment, material reacts with water forming predominantly insoluble polyureas which appear to be stable. In the atmospheric environment, material is expected to have a short tropospheric half-life, based on calculations and by analogy with related diisocyanates.

Data for Component: **Polymethylenepolyphenyl polyisocyanate, polypropyleneglycol copolymer**

Movement & Partitioning

In the aquatic and terrestrial environment, movement is expected to be limited by its reaction with water forming predominantly insoluble polyureas.

Persistence and Degradability

In the aquatic and terrestrial environment, material reacts with water forming predominantly insoluble polyureas which appear to be stable. In the atmospheric environment, material is expected to have a short tropospheric half-life, based on calculations and by analogy with related diisocyanates.

Data for Component: **Diphenylmethane Diisocyanate, isomers and homologues**

Movement & Partitioning

In the aquatic and terrestrial environment, movement is expected to be limited by its reaction with water forming predominantly insoluble polyureas.

Persistence and Degradability

In the aquatic and terrestrial environment, material reacts with water forming predominantly insoluble polyureas which appear to be stable. In the atmospheric environment, material is expected to have a short tropospheric half-life, based on calculations and by analogy with related diisocyanates.

Data for Component: **Paraffin waxes and Hydrocarbon waxes, chlorinated**

Movement & Partitioning

Bioconcentration potential is low (BCF less than 100 or log Pow greater than 7). Expected to be relatively immobile in soil (Koc > 5000). Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process.
Henry's Law Constant (H): < 1.0E-07 atm*m3/mole; 25 °C Estimated.
Partition coefficient, n-octanol/water (log Pow): 7.4 Estimated.
Partition coefficient, soil organic carbon/water (Koc): > 5,000 Estimated.

Persistence and Degradability

Expected to degrade only slowly in the environment.
Theoretical Oxygen Demand: 2.89 mg/mg

Data for Component: **Isobutane**

Movement & Partitioning

Bioconcentration potential is low (BCF less than 100 or log Pow less than 3). Potential for mobility in soil is very high (Koc between 0 and 50).
Henry's Law Constant (H): 1.19E+00 atm*m3/mole; 25 °C Measured
Partition coefficient, n-octanol/water (log Pow): 2.76 Measured
Partition coefficient, soil organic carbon/water (Koc): 35 Estimated.
Distribution in Environment: Mackay Level 1 Fugacity Model:

Air	Water.	Biota	Soil	Sediment
100 %	0 %	0 %	0 %	0 %

Persistence and Degradability

Biodegradation may occur under aerobic conditions (in the presence of oxygen).
Indirect Photodegradation with OH Radicals

Rate Constant	Atmospheric Half-life	Method
2.44E-12 cm3/s	4.4 d	Estimated.

Theoretical Oxygen Demand: 3.58 mg/mg

Data for Component: **Propane**

Movement & Partitioning

Bioconcentration potential is low (BCF less than 100 or log Pow less than 3). Potential for mobility in soil is very high (Koc between 0 and 50).
Henry's Law Constant (H): 7.07E-01 atm*m3/mole; 25 °C Measured
Partition coefficient, n-octanol/water (log Pow): 2.36 Measured
Partition coefficient, soil organic carbon/water (Koc): 24 - 460 Estimated.
Distribution in Environment: Mackay Level 1 Fugacity Model:

Air	Water.	Biota	Soil	Sediment
100 %	0 %	0 %	0 %	0 %

Persistence and Degradability

No relevant information found.
Indirect Photodegradation with OH Radicals

Rate Constant	Atmospheric Half-life	Method
1.27E-12 cm3/s	8.4 d	Estimated.

Theoretical Oxygen Demand: 3.64 mg/mg

Data for Component: **Methyl ether**

Movement & Partitioning

Bioconcentration potential is low (BCF less than 100 or log Pow less than 3). Potential for mobility in soil is very high (Koc between 0 and 50).
Henry's Law Constant (H): 9.78E-04 atm*m3/mole; 25 °C Measured
Partition coefficient, n-octanol/water (log Pow): 0.10 Measured
Partition coefficient, soil organic carbon/water (Koc): 1.29 - 14 Estimated.

Persistence and Degradability

Material is expected to biodegrade only very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.

Indirect Photodegradation with OH Radicals

Rate Constant	Atmospheric Half-life	Method
1.66E-12 cm3/s	6.4 d	Estimated.

OECD Biodegradation Tests:

Biodegradation	Exposure Time	Method
5 %	28 d	OECD 301A Test

Theoretical Oxygen Demand: 2.08 mg/mg

Data for Component: **4,4' -Methylenediphenyl diisocyanate**

Movement & Partitioning

In the aquatic and terrestrial environment, movement is expected to be limited by its reaction with water forming predominantly insoluble polyureas.

Persistence and Degradability

In the aquatic and terrestrial environment, material reacts with water forming predominantly insoluble polyureas which appear to be stable. In the atmospheric environment, material is expected to have a short tropospheric half-life, based on calculations and by analogy with related diisocyanates.

ECOTOXICITY

Data for Component: **Isocyanic acid, polymethylenepolyphenylene ester, polymer with .alpha.,.alpha.',.alpha.''-1,2,3-propanetriyltris[.omega.-hydroxypoly**

The measured ecotoxicity is that of the hydrolyzed product, generally under conditions maximizing production of soluble species. Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

Toxicity to Soil Dwelling Organisms

LC50, Earthworm Eisenia foetida, adult, 14 d: > 1,000 mg/kg

Data for Component: **Polymethylenepolyphenyl polyisocyanate, polypropyleneglycol copolymer**

The measured ecotoxicity is that of the hydrolyzed product, generally under conditions maximizing production of soluble species. Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

Toxicity to Soil Dwelling Organisms

LC50, Earthworm Eisenia foetida, adult, 14 d: > 1,000 mg/kg

Data for Component: **Diphenylmethane Diisocyanate, isomers and homologues**

The measured ecotoxicity is that of the hydrolyzed product, generally under conditions maximizing production of soluble species. Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

Toxicity to Soil Dwelling Organisms

LC50, Earthworm Eisenia foetida, adult, 14 d: > 1,000 mg/kg

Data for Component: **Paraffin waxes and Hydrocarbon waxes, chlorinated**

Material is very highly toxic to aquatic organisms on an acute basis (LC50/EC50 <0.1 mg/L in the most sensitive species).

Fish Acute & Prolonged Toxicity
LC50, rainbow trout (Oncorhynchus mykiss), static, 96 h: > 100 mg/l
Aquatic Invertebrate Acute Toxicity
EC50, water flea Daphnia magna, immobilization: 0.037 mg/l

Data for Component: **Isobutane**
No relevant information found.

Data for Component: **Propane**
No relevant information found.

Data for Component: **Methyl ether**
Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

Fish Acute & Prolonged Toxicity
LC50, guppy (Poecilia reticulata), 96 h: > 4,000 mg/l
Aquatic Invertebrate Acute Toxicity
LC50, water flea Daphnia magna, 48 h: > 4,000 mg/l

Data for Component: **4,4' -Methylenediphenyl diisocyanate**
The measured ecotoxicity is that of the hydrolyzed product, generally under conditions maximizing production of soluble species. Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

Toxicity to Soil Dwelling Organisms
LC50, Earthworm Eisenia foetida, adult, 14 d: > 1,000 mg/kg

13. Disposal Considerations

DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. AS YOUR SUPPLIER, WE HAVE NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION: Composition Information. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Recycler. Reclaimer. Incinerator or other thermal destruction device. For additional information, refer to: Handling & Storage Information, MSDS Section 7 Stability & Reactivity Information, MSDS Section 10 Regulatory Information, MSDS Section 15 As a service to its customers, Dow can provide names of information resources to help identify waste management companies and other facilities which recycle, reprocess or manage chemicals or plastics, and that manage used drums. Telephone Dow's Customer Information Group at 1-800-258-2436 or 1-989-832-1556 (U.S.), or 1-800-331-6451 (Canada) for further details.

14. Transport Information

DOT Non-Bulk

CONSUMER COMMODITY RECLASSIFIED AS ORM-D MATERIAL

DOT Bulk
NOT AVAILABLE IN BULK CONTAINERS

IMDG
Proper Shipping Name: AEROSOLS, FLAMMABLE
Hazard Class: 2.1 **ID Number:** UN1950
EMS Number: F-D,S-U
Marine pollutant.: Yes

LIMITED QUANTITY

ICAO/IATA
Proper Shipping Name: AEROSOLS, FLAMMABLE
Hazard Class: 2.1 **ID Number:** UN1950**Cargo Packing Instruction:** 203
Passenger Packing Instruction: 203

LIMITED QUANTITY
Additional Information

MARINE POLLUTANT

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. Regulatory Information

OSHA Hazard Communication Standard
This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312

Immediate (Acute) Health Hazard	Yes
Delayed (Chronic) Health Hazard	Yes
Fire Hazard	Yes
Reactive Hazard	Yes
Sudden Release of Pressure Hazard	Yes

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313
This product contains the following substances which are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and which are listed in 40 CFR 372.

Component	CAS #	Amount
4,4' -Methylenediphenyl diisocyanate	101-68-8	>= 5.0 - <= 10.0 %
Diphenylmethane Diisocyanate, isomers and homologues	9016-87-9	>= 5.0 - <= 10.0 %

Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Hazardous Substances List and/or Pennsylvania Environmental Hazardous Substance List:
The following product components are cited in the Pennsylvania Hazardous Substance List and/or the Pennsylvania Environmental Substance List, and are present at levels which require reporting.

Component	CAS #	Amount
4,4' -Methylenediphenyl diisocyanate	101-68-8	>= 5.0 - <= 10.0 %
Isobutane	75-28-5	>= 5.0 - <= 10.0 %
Methyl ether	115-10-6	>= 1.0 - <= 5.0 %
Propane	74-98-6	>= 1.0 - <= 5.0 %

Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Special Hazardous Substances List:
To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)
This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

US. Toxic Substances Control Act
All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.30
CEPA - Domestic Substances List (DSL)
All substances contained in this product are listed on the Canadian Domestic Substances List (DSL) or are not required to be listed.
European Inventory of Existing Commercial Chemical Substances (EINECS)
The components of this product are on the EINECS inventory or are exempt from inventory requirements.

16. Other Information

Product Literature
Additional information on this product may be obtained by calling your sales or customer service contact.

Recommended Uses and Restrictions
Component(s) for the manufacture of urethane polymers. We recommend that you use this product in a manner consistent with the listed use. If your intended use is not consistent with the stated use, please contact your sales or technical service representative.

Revision
Identification Number: 1011098 / 1001 / Issue Date 02/16/2010 / Version: 3.0
Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend

N/A	Not available
W/W	Weight/Weight
OEL	Occupational Exposure Limit
STEL	Short Term Exposure Limit
TWA	Time Weighted Average
ACGIH	American Conference of Governmental Industrial Hygienists, Inc.
DOW IHG	Dow Industrial Hygiene Guideline
WEEL	Workplace Environmental Exposure Level
HAZ_DES	Hazard Designation
Action Level	A value set by OSHA that is lower than the PEL which will trigger the need for activities such as exposure monitoring and medical surveillance if exceeded.

The Dow Chemical Company urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is

the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.

SAFETY DATA SHEET

1. Identification

Product identifier **Foaming Glass Cleaner**

Other means of identification

Product Code 105520

Recommended use Not available.

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company name	Malco Products, Inc.	
Address	361 Fairview Ave Barberton, OH 44203 United States	
Telephone	Phone	800-253-2526
	Fax	330-753-2025
Website	www.malcopro.com	
E-mail	msdsinfo@malcopro.com	
Contact person	Technical Department	
Emergency phone number	Phone	1-800-424-9300

2. Hazard(s) identification

Physical hazards	Flammable aerosols	Category 1
Health hazards	Not classified.	
Environmental hazards	Not classified.	
OSHA defined hazards	Not classified.	

Label elements



Signal word Danger

Hazard statement Extremely flammable aerosol. Harmful to aquatic life. Harmful to aquatic life with long lasting effects.

Precautionary statement

Prevention Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Do not spray on an open flame or other ignition source. Pressurized container: Do not pierce or burn, even after use. Avoid release to the environment.

Response Wash hands after handling.

Storage Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F.

Disposal Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC) Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment. Sparks may ignite liquid and vapor. May cause flash fire or explosion.

Supplemental information 14.25% of the mixture consists of component(s) of unknown acute hazards to the aquatic environment. 14.25% of the mixture consists of component(s) of unknown long-term hazards to the aquatic environment.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Ethylene Glycol Monobutylether		111-76-2	5 - < 10

Chemical name	Common name and synonyms	CAS number	%
N-butane		106-97-8	5 - < 10
Propane		74-98-6	1 - < 3
Sodium Nitrite		7632-00-0	< 1
Other components below reportable levels			80 - < 90

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation If symptoms develop move victim to fresh air. Get medical attention if symptoms persist.

Skin contact Wash off with soap and water. Get medical attention if irritation develops and persists.

Eye contact Rinse with water. Get medical attention if irritation develops and persists.

Ingestion In the unlikely event of swallowing contact a physician or poison control center.

Most important symptoms/effects, acute and delayed Direct contact with eyes may cause temporary irritation.

Indication of immediate medical attention and special treatment needed Treat symptomatically.

General information Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media Water fog. Foam. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical Contents under pressure. Pressurized container may explode when exposed to heat or flame. This product is a poor conductor of electricity and can become electrostatically charged. If sufficient charge is accumulated, ignition of flammable mixtures can occur. To reduce potential for static discharge, use proper bonding and grounding procedures. This liquid may accumulate static electricity when filling properly grounded containers. Static electricity accumulation may be significantly increased by the presence of small quantities of water or other contaminants. Material will float and may ignite on surface of water. During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

Fire fighting equipment/instructions Move containers from fire area if you can do so without risk. Containers should be cooled with water to prevent vapor pressure build up. For massive fire in cargo area, use unmanned hose holder or monitor nozzles, if possible. If not, withdraw and let fire burn out.

Specific methods Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. In the event of fire and/or explosion do not breathe fumes.

General fire hazards Extremely flammable aerosol.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Remove all possible sources of ignition in the surrounding area. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Use appropriate containment to avoid environmental contamination. Transfer by mechanical means such as vacuum truck to a salvage tank or other suitable container for recovery or safe disposal. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up

Refer to attached safety data sheets and/or instructions for use. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. Stop leak if you can do so without risk. Move the cylinder to a safe and open area if the leak is irreparable. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Prevent product from entering drains. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. For waste disposal, see section 13 of the SDS.

Environmental precautions

Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground. Inform appropriate managerial or supervisory personnel of all environmental releases. Use appropriate containment to avoid environmental contamination.

7. Handling and storage

Precautions for safe handling

Minimize fire risks from flammable and combustible materials (including combustible dust and static accumulating liquids) or dangerous reactions with incompatible materials. Handling operations that can promote accumulation of static charges include but are not limited to: mixing, filtering, pumping at high flow rates, splash filling, creating mists or sprays, tank and container filling, tank cleaning, sampling, gauging, switch loading, vacuum truck operations. Pressurized container: Do not pierce or burn, even after use. Do not use if spray button is missing or defective. Do not spray on a naked flame or any other incandescent material. Do not smoke while using or until sprayed surface is thoroughly dry. Do not cut, weld, solder, drill, grind, or expose containers to heat, flame, sparks, or other sources of ignition. All equipment used when handling the product must be grounded. Do not re-use empty containers. Do not get in eyes, on skin, or on clothing. Avoid prolonged exposure. Use only in well-ventilated areas. Wear appropriate personal protective equipment. Avoid release to the environment. Observe good industrial hygiene practices.

For additional information on equipment bonding and grounding, refer to the Canadian Electrical Code in Canada, (CSA C22.1), or the American Petroleum Institute (API) Recommended Practice 2003, "Protection Against Ignitions Arising out of Static, Lightning, and Stray Currents" or National Fire Protection Association (NFPA) 77, "Recommended Practice on Static Electricity" or National Fire Protection Association (NFPA) 70, "National Electrical Code".

Conditions for safe storage, including any incompatibilities

Level 1 Aerosol.

Pressurized container. Protect from sunlight and do not expose to temperatures exceeding 50°C/122 °F. Do not puncture, incinerate or crush. Do not handle or store near an open flame, heat or other sources of ignition. This material can accumulate static charge which may cause spark and become an ignition source. Avoid spark promoters. Ground/bond container and equipment. These alone may be insufficient to remove static electricity. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Ethylene Glycol Monobutylether (CAS 111-76-2)	PEL	240 mg/m3 50 ppm
Propane (CAS 74-98-6)	PEL	1800 mg/m3 1000 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value
Ethylene Glycol Monobutylether (CAS 111-76-2)	TWA	20 ppm
N-butane (CAS 106-97-8)	STEL	1000 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Ethylene Glycol Monobutylether (CAS 111-76-2)	TWA	24 mg/m3

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
		5 ppm
N-butane (CAS 106-97-8)	TWA	1900 mg/m3
		800 ppm
Propane (CAS 74-98-6)	TWA	1800 mg/m3
		1000 ppm

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
Ethylene Glycol Monobutylether (CAS 111-76-2)	200 mg/g	Butoxyacetic acid (BAA), with hydrolysis	Creatinine in urine	*

* - For sampling details, please see the source document.

Exposure guidelines

US - California OELs: Skin designation

Ethylene Glycol Monobutylether (CAS 111-76-2) Can be absorbed through the skin.

US - Minnesota Haz Subs: Skin designation applies

Ethylene Glycol Monobutylether (CAS 111-76-2) Skin designation applies.

US - Tennessee OELs: Skin designation

Ethylene Glycol Monobutylether (CAS 111-76-2) Can be absorbed through the skin.

US NIOSH Pocket Guide to Chemical Hazards: Skin designation

Ethylene Glycol Monobutylether (CAS 111-76-2) Can be absorbed through the skin.

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Ethylene Glycol Monobutylether (CAS 111-76-2) Can be absorbed through the skin.

Appropriate engineering controls Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.

Other Wear suitable protective clothing.

Respiratory protection If permissible levels are exceeded use NIOSH mechanical filter / organic vapor cartridge or an air-supplied respirator.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations When using do not smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Physical state Liquid.

Form Aerosol.

Color Not available.

Odor Not available.

Odor threshold Not available.

pH Not available.

Melting point/freezing point -177.63 °F (-116.46 °C) estimated

Initial boiling point and boiling range 155.25 °F (68.47 °C) estimated

Flash point 13.3 °F (-10.4 °C) estimated

Evaporation rate Not available.

Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	2 % estimated
Flammability limit - upper (%)	8.7 % estimated
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	1712.3 hPa estimated
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	546.56 °F (285.87 °C) estimated
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Explosive properties	Not explosive.
Flammability class	Flammable IB estimated
Heat of combustion (NFPA 30B)	5.33 kJ/g estimated
Oxidizing properties	Not oxidizing.
Percent volatile	6.25 % estimated
VOC (Weight %)	6.25 % estimated

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Avoid temperatures exceeding the flash point. Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents. Nitrates. Fluorine. Chlorine.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Prolonged inhalation may be harmful.
Skin contact	2-Butoxy ethanol may be absorbed through the skin in toxic amounts if contact is repeated and prolonged. These effects have not been observed in humans.
Eye contact	Direct contact with eyes may cause temporary irritation.
Ingestion	Expected to be a low ingestion hazard.
Symptoms related to the physical, chemical and toxicological characteristics	Direct contact with eyes may cause temporary irritation.

Information on toxicological effects

Acute toxicity

Components	Species	Test Results
Ethylene Glycol Monobutylether (CAS 111-76-2)		
Acute		
Dermal		
LD50	Rabbit	400 mg/kg
Inhalation		
LC50	Mouse	700 ppm, 7 Hours
	Rat	450 ppm, 4 Hours
Oral		
LD50	Guinea pig	1.2 g/kg
	Mouse	1.2 g/kg
	Rabbit	0.32 g/kg
	Rat	560 mg/kg
N-butane (CAS 106-97-8)		
Acute		
Inhalation		
LC50	Mouse	680 mg/l, 2 Hours
	Rat	658 mg/l, 4 Hours
Propane (CAS 74-98-6)		
Acute		
Inhalation		
LC50	Rat	> 1442.847 mg/l, 15 Minutes
Sodium Nitrite (CAS 7632-00-0)		
Acute		
Inhalation		
LC50	Rat	5.5 mg/l, 4 Hours
Oral		
LD50	Mouse	175 mg/kg
	Rabbit	186 mg/kg
	Rat	85 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation Prolonged skin contact may cause temporary irritation.

Serious eye damage/eye irritation Direct contact with eyes may cause temporary irritation.

Respiratory or skin sensitization

Respiratory sensitization Not a respiratory sensitizer.

Skin sensitization This product is not expected to cause skin sensitization.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

IARC Monographs. Overall Evaluation of Carcinogenicity

Ethylene Glycol Monobutylether (CAS 111-76-2) 3 Not classifiable as to carcinogenicity to humans.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure Not classified.

Specific target organ toxicity - repeated exposure Not classified.

Aspiration hazard Not an aspiration hazard.

Chronic effects May be harmful if absorbed through skin. Prolonged inhalation may be harmful.

2-Butoxy ethanol may be absorbed through the skin in toxic amounts if contact is repeated and prolonged. These effects have not been observed in humans.

12. Ecological information

Ecotoxicity Harmful to aquatic life with long lasting effects.

Components		Species	Test Results
Ethylene Glycol Monobutylether (CAS 111-76-2)			
Aquatic			
Fish	LC50	Inland silverside (Menidia beryllina)	1250 mg/l, 96 hours
Sodium Nitrite (CAS 7632-00-0)			
Aquatic			
Crustacea	EC50	Greasyback shrimp (Metapenaeus ensis)	16.14 - 26.61 mg/l, 48 hours
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	0.15 - 0.25 mg/l, 96 hours

* Estimates for product may be based on additional component data not shown.

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential

Partition coefficient n-octanol / water (log Kow)	
Ethylene Glycol Monobutylether	0.83
N-butane	2.89
Propane	2.36

Mobility in soil No data available.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Contents under pressure. Do not puncture, incinerate or crush. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

14. Transport information

DOT

UN number UN1950
UN proper shipping name Aerosol,flammable
Transport hazard class(es)
Class 2.1
Subsidiary risk -
Packing group II
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.
Special provisions IB2, T7, TP1, TP8, TP28
Packaging exceptions 150
Packaging non bulk 202
Packaging bulk 242

IATA

UN number	UN1950
UN proper shipping name	Aerosol,flammable
Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
Packing group	II
Environmental hazards	No.
ERG Code	3H
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Other information	
Passenger and cargo aircraft	Allowed.
Cargo aircraft only	Allowed.

IMDG

UN number	UN1950
UN proper shipping name	Aerosol,flammable
Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
Packing group	II
Environmental hazards	
Marine pollutant	No.
EmS	F-E, S-E
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not established.

DOT



IATA; IMDG



15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Sodium Nitrite (CAS 7632-00-0) Listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Immediate Hazard - No
Delayed Hazard - No
Fire Hazard - Yes
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical No

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Sodium Nitrite	7632-00-0	< 1

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

N-butane (CAS 106-97-8)
Propane (CAS 74-98-6)

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations

US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)

Not listed.

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

Ethylene Glycol Monobutylether (CAS 111-76-2)
N-butane (CAS 106-97-8)

US. Massachusetts RTK - Substance List

Ethylene Glycol Monobutylether (CAS 111-76-2)
N-butane (CAS 106-97-8)
Propane (CAS 74-98-6)
Sodium Nitrite (CAS 7632-00-0)

US. New Jersey Worker and Community Right-to-Know Act

Ethylene Glycol Monobutylether (CAS 111-76-2)
N-butane (CAS 106-97-8)
Propane (CAS 74-98-6)
Sodium Nitrite (CAS 7632-00-0)

US. Pennsylvania Worker and Community Right-to-Know Law

Ethylene Glycol Monobutylether (CAS 111-76-2)
N-butane (CAS 106-97-8)
Propane (CAS 74-98-6)
Sodium Nitrite (CAS 7632-00-0)

US. Rhode Island RTK

N-butane (CAS 106-97-8)
Propane (CAS 74-98-6)
Sodium Nitrite (CAS 7632-00-0)

US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 06-18-2015

Version # 01

Disclaimer Malco Automotive cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

SAFE USE INSTRUCTION SHEET

Creation Date 05-Mar-1997 **Revision Date** 07-Dec-2016 **Version** 3

0. GENERAL INFORMATION

This Safe Use Instruction Sheet is the document provided by Owens Corning to communicate safe handling and use instructions for manufactured articles neither regulated by OSHA Hazard Communication Standard, 29 CFR 1910.1200 nor by the Canada Hazardous Products Regulation SOR/2015-17 (WHMIS 2015)

1. IDENTIFICATION

Product Name	FOAMULAR® Extruded Polystyrene Insulation - Zero Ozone Depletion Formula
Synonyms	Buoyancy Billet, Foamular® 150, Foamular® 250, Foamular® 350, Foamular® 400, Foamular® 404, Foamular® 600, Foamular® 604, Foamular® 1000, Foamular® C-200, Foamular® C-300, Foamular® CodeBord®, Foamular® Cel-Lok®, Foamular® CW15, Foamular® CW25, Foamular® High-R CW Plus, Foamular® LT30, Foamular® LT40, Foamular® 404RB, Foamular® 604RB, Foamular® AgTek, Foamular® PROPINK®, Foamular® DURAPINK®, Foamular® PINKCORE®, Foamular® PINKCORE® TT, Foamular® Half-Inch, Foamular® INSULPINK®, Foamular® THERMAPINK®, Foamular® DURAPINK® FA, Foamular® DURAPINK® Plus, FOAMULAR EASI, Foamular® INSULPINK® - Z, Foamular® THERMAPINK® 18, Foamular® THERMAPINK® 25, Foamular® THERMAPINK® 40, Foamular® THERMAPINK® 60, Foamular® Extruded Polystyrene, Foamular® Insulating Sheathing, Foamular® INSUL-DRAIN®, Fabrication Billet, ProPink® Fanfold, Fanfold DWB, TRUFOLD® Fanfold
Product Code	OCFI00001
Recommended Use	Air and Water Sealing Insulation
Manufacturer Address	Owens Corning Foam Insulation, LLC One Owens Corning Parkway Toledo, Ohio 43659
Company Phone Number	1-800-GET-PINK or 1-800-438-7465
24 Hour Emergency Phone Number	Chemtrec 1-800-424-9300
Emergency Telephone	1-419-248-5330 (after 5 pm ET and weekends)
E-mail address	safetydatasheet@owenscorning.com
Company Website	http://owenscorning.com/

2. HAZARDS IDENTIFICATION

OSHA Regulatory Status	This product is considered an article. 29 CFR 1910.1200(c) definition of an article is as follows: "Article" means a manufactured item other than a fluid or particle: (i) which is formed to a specific shape or design during manufacture; (ii) which has end use function(s) dependent in whole or in part upon its shape or design during end use; and (iii) which under normal conditions of use does not release more than very small quantities, e.g., minute or trace amounts of a hazardous chemical (as determined under paragraph (d) of this section), and does not pose a physical hazard or health risk to employees
WHMIS Regulatory Status	This product is considered an article per the Canadian Hazardous Products Regulation SOR/2015-17

Manufactured articles which meet the definition of the Canadian Hazardous Products Act (any article that is formed to a specific shape or design during manufacture, the intended use of which when in that form is dependent in whole or in part on its shape or design, and that, when being installed, if the intended use of the article requires it to be installed, and under normal conditions of use, will not release or otherwise cause an individual to be exposed to a hazardous product) are not regulated by the Canadian Hazardous Products Regulation SOR/2015-17

GHS - Classification This product is not classified hazardous according to GHS criteria

3. COMPOSITION/INFORMATION ON INGREDIENTS

There are no hazardous components/ingredients in this product

4. FIRST AID MEASURES

Description of First Aid Measures

Eye contact
- Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes
- If eye irritation persists: Get medical advice/attention

Skin contact
- Wash skin with soap and water

Inhalation
- Remove to fresh air

Ingestion
- Accidental ingestion of this material is unlikely
- If this does occur watch person for several days to make sure intestinal blockage does not occur

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
- Dry chemical
- Foam
- Carbon dioxide (CO2)
- Water spray (fog)

Protective equipment and precautions for firefighters
- As in any fire, wear self-contained breathing apparatus (positive-pressure), MSHA/NIOSH (approved or equivalent) and full protective gear

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
- Avoid contact with eyes and skin

Methods for cleaning up
- Use personal protective equipment as required
- Take up mechanically, placing in appropriate containers for disposal
- Clean contaminated surface thoroughly
- Avoid creating dust

7. HANDLING AND STORAGE

Storage Conditions
- Store in a manner which will minimize dust generation and accumulation
- Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity)

• To prevent build-up of flammable vapors, do not store large quantities of this product in unventilated spaces

Incompatible materials
• Amines
• Esters
• Hydrocarbons

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines
This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Engineering Controls Ensure adequate ventilation, especially in confined areas

Individual protection measures, such as personal protective equipment

Eye/face protection • Wear safety glasses with side shields (or goggles)

Skin and body protection
• Wear protective gloves
• Wear long-sleeved shirt and long pants

Respiratory protection • When workers are facing concentrations above the exposure limit they must use appropriate certified respirators in accordance with their company's respiratory protection program, local regulations or 29 CFR 1910.134

General Hygiene Considerations • Wash face, hands and any exposed skin thoroughly after handling

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State @20°C	Solid Board
Appearance	Board Pellets
Odor	No detectable odor
Color	Pink, White, Gray
Water solubility	Insoluble in water
Specific Gravity	0.021-0.064 (Ref: water=1)
Softening point	104 °C

10. STABILITY AND REACTIVITY

Stability • Stable

Possibility of Hazardous Reactions • None under normal processing

Hazardous Decomposition Products
• Carbon dioxide (CO2)
• Carbon monoxide
• Styrene
• Small quantities of hydrogen fluoride, hydrogen chloride, fluorine and chlorine could be released
• Other undetermined compounds could be released in small quantities

11. TOXICOLOGICAL INFORMATION

Product Information Product does not present an acute toxicity hazard based on known or supplied information

12. ECOLOGICAL INFORMATION

This product is not expected to be hazardous for the environment

13. DISPOSAL CONSIDERATIONS

Disposal should be in accordance with applicable regional, national and local laws and regulations

14. TRANSPORT INFORMATION

This material is not subject to regulation as a hazardous material for shipping

15. REGULATORY INFORMATION

International Inventories	This product is classified as an article. Articles are exempted from registration or listing under chemicals inventories like TSCA (USA), DSL/NDSL (CAN), REACH (EU), ENCS (JP), IECSC (CN), KECL (KR), PICCS (PH), AICS (AUS)
California Proposition 65	This product does not contain any Proposition 65 chemicals

16. OTHER INFORMATION

Creation Date	05-Mar-1997
Revision Date	07-Dec-2016
Revision Note	This product is classified as an Article according to OSHA 29 CFR 1910.1200 and to the Canadian Hazardous Products Regulation SOR/2015-17 (WHMIS 2015). therefore is not regulated. This Safe Use Instruction Sheet replaces the former Material Safety Data Sheet (MSDS) and is not regulated

Disclaimer
Reasonable care has been taken in the preparation of this information, but the manufacturer makes no warranty of merchantability or any other warranty, expressed or implied, with respect to this information. The manufacturer makes no representations and assumes no liability for any direct, incidental or consequential damages resulting from its use

End of Safe Use Instruction Sheet

SAFETY DATA SHEET

1. *PRODUCT AND COMPANY IDENTIFICATION*

Product Name: GALVANIZED STEEL WIRE

Synonyms: N/A

CAS Number: MIXTURE

Product Use: Various wire products.

Manufacturer/Supplier: WIRE-BOND

Address: 400 Rountree Road Charlotte, NC 28217

General Information: 704-525-5554

Transportation Emergency Number: CHEMTREC: 800-424-9300

2. *HAZARDS IDENTIFICATION:*

This product is gray-black with no odor.

Emergency Overview:

Steel Products sold by Mid South Wire are not hazardous per OSHA GHS 29 CFR 1910, 1915, 1926. However, individual customer processes (such as welding, sawing, brazing, grinding, abrasive blasting, and machining) may result in the formation of fumes, dust (combustible or otherwise), and/or particulate that may present the following hazards:

OSHA Hazards: **Carcinogen**
Skin Sensitizer
Target Organ Effect-Lungs

Classification: Carcinogenicity (Category 2)
Skin Sensitization (Category 1)
Specific Target Organ Toxicity-Repeated Exposure (Category 1)

Pictogram(s):



Signal Word: Danger

Hazard Statement(s)

Dust/Fumes may cause an allergic skin reaction.
Dust/Fumes suspected of causing cancer via inhalation.
Inhalation of dust/fumes causes damage to respiratory tract through prolonged or repeated exposure.

Precautionary Statement(s)

Do not handle until all safety precautions have been read and understood.
Avoid breathing dust/fumes.
Use personal protective equipment as required.
If exposed or concerned: Get medical advice/attention.

3. *COMPOSITION/INFORMATION*

The components listed below represent the chemical composition of the wire material:

Steel Wire Composition				
Element	CAS NO.	Wt. %	OSHA PEL	ACGIH-TLV
Iron	7439-89-6	BALANCE	10MG/M3	5MG/M3
Manganese	7439-96-5	0-1.0	5MG/M3	5MG/M3
Silicon	7440-21-3	0-1.5	10MG/M3	10MG/M3
Chromium	7440-47-3	0-0.15	10MG/M3	5MG/M3
Molybdenum	7439-98-7	0-1.0	5MG/M3	5MG/M3
Carbon	7440-44-0	0-1.0	3.5MG/M3	Non-Listed
Nickel	7440-02-0	0-0.15	10MG/M3	5MG/M3
Sulfur	7704-34-9	0-1.0	N/AV	N/AV
Tin	7440-31-5	0-1.0	N/AV	N/AV
Phosphorus	7723-14-0	0-1.0	N/AV	0.1MG/M3
Copper	7440-50-8	0-1.0	3.5MG/M3	0.2MG/M3
Aluminum	7429-90-5	<0.10	N/AV	10MG/M3
Vanadium	7440-62-2	0-1.0	6MG/M3	0.5MG/M3
Titanium	7440-32-6	<0.10	N/AV	N/AV
Boron	7440-42-8	<0.10	6.5MG/M3	N/AV
Lead	7439-92-1	<0.001	10MG/M3	10MG/M3
No other elements or compounds exceed 1%			N/AV=Not Available	

Surface Coating				
Element	CAS NO.	Wt. %	OSHA PEL	ACGIH-TLV
Zinc	7440-66-6	0-14*	5MG/M3	5MG/M3
Lead	7439-92-1	0-0.01	0.005MG/M3	0.15MG/M3

Boron Salts	1303-96-4	0-0.20	N/A	N/A
Stearates	N/A	0-0.20	N/A	10MG/M3
Calcium Hydroxide	1305-62-0	0-0.20	N/A	10MG/M3
Zinc Oxide	1314-13-2	0-0.10	N/A	10MG/M3
Petroleum Dist.	8002-05-9	0-0.01	N/A	5MG/M3
Paraffinic Dist.	64742-65-0	0-0.01	N/A	5MG/M3

*See Zinc Table on Page 13

4. *FIRST AID MEASURES*

Description of First Aid Measures

Eye Contact: In case of overexposure to dusts or fumes, immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the eye lids. Get medical attention if irritation persists. Thermal burns should be treated as medical emergencies.

Skin Contact: In case of overexposure to dusts or particulates, wash with soap and plenty of water. Get medical attention if irritation develops or persists. If thermal burn occurs, flush area with cold water and get immediate medical attention.

Inhalation: In case of overexposure to dusts or fumes, remove to fresh air. Get immediate medical attention if symptoms described in the SDS develop.

Ingestion: Not considered an ingestion hazard. However, if excessive amounts of dust or particulates are swallowed, treat symptomatically and supportively. Get medical attention.

Notes to Physician: Inhalation of metal fume or metal oxides may produce an acute febrile state, with cough, chills, weakness, and general malaise, nausea, vomiting, muscle cramps, and remarkable

leukocytosis. Treatment is symptomatic, and condition is self-limited in 24-48 hours. Chronic exposure to dusts may result in pneumoconiosis of mixed type.

5. ***FIRE FIGHTING MEASURES***

Flash Point (Method): Not applicable.

Flammable Limits (% volume in air): Not applicable.

Auto Ignition Temperature: Not applicable.

Extinguishing Media: For molten metal, use dry powder or sand. For steel dust use dry sand, water, foam, argon or nitrogen.

Special Fire Fighting Procedures: Do not use water on molten metal. Do not use Carbon Dioxide (CO2). Firefighters should not enter confined spaces without wearing NIOSH/MSHA approved positive pressure breathing apparatus (SCBA) with full face mask and full protective equipment.

Unusual Fire or Explosion Hazards: Steel products doo not present fire or explosion hazards under normal conditions. Any non-oxidized fine metal particles/dust generated by grinding, sawing, abrasive blasting, or individual customer processes may produce materials that the customer should test for combustibility and other hazards in accordance with the applicable regulations. High concentrations of combustible metallic fines in the air may present an explosion hazard.

6. ***ACCIDENTAL RELEASE MEASURES***

Precautions if Material is Spilled or Released: Emergency response is unlikely unless in the form of combustible dust. Avoid inhalation, eye, or skin contact of dusts by using appropriate precautions outlined in this SDS (see section 8). Fine turnings and small chips should be swept or vacuumed and placed into appropriate disposable containers. Keep fine dust or powder away from sources of ignition. Scrap should be reclaimed for recycling. Prevent materials from entering drains,

sewers, or waterways. Specific standards and regulations may be applicable to materials generated by individual customer processes. As appropriate, these standards and regulations should be consulted for applicability.

Fire and Explosion Hazards: Some customer processes may generate combustible dust that may require specific precautions when cleaning spills or releases of dust.

Environmental Precautions: Some grades of steel may contain reportable quantities of alloying elements. See Section 15 for additional information.

Waste Disposal Methods: Dispose of used or unused product in accordance with applicable Federal, State, and local regulations. Please recycle.

7. *HANDLING AND STORAGE*

Storage Temperatures: Stable under normal temperatures and pressures.

Precautions to be taken in Handling and Storing: Store away from strong oxidizers. Dusts and/or powders, alone, or combined with process specific fluids, may form explosive mixtures with air. Applicable Federal, state and local laws and regulations may require testing dust generated from processing of steel products to determine if it represents a fire or explosion hazard and to determine appropriate protection methods. Avoid breathing dust or fumes.

8. *EXPOSURE CONTROLS/PERSONAL PROTECTION*

Operations with potential for generating high concentrations of airborne particulates or fumes should be evaluated and controlled as necessary.

Eye Protection: Use safety glasses. Dust resistant safety goggles are recommended under circumstances where particles could cause mechanical injury such as grinding or cutting. Face shields should be used when welding or cutting.

Skin: Appropriate protective gloves should be worn as necessary. Good personal hygiene practices should be followed including cleansing exposed skin several times daily with soap and water and laundering or dry cleaning soiled work clothing.

Respiratory Protection: NIOSH/MSHA approved dust/fume/mist respirator should be used to avoid excessive exposure. See Section 3 for component material information exposure limits. If such concentrations are sufficiently high that this respirator is inadequate, or high enough to cause oxygen deficiency, use a positive pressure self-contained breathing apparatus (SCBA). Follow all applicable respirator use, fitting, and training standards and regulations.

Ventilation: Provide general and/or local exhaust ventilation to control airborne levels of dust or fumes below exposure limits.

Exposure Guidelines: No permissible exposure limits (PEL) or threshold limit values (TLV) exist for steel, See Section 3 for component materials. Various grades of steel will contain different combinations of these elements. Trace elements may also be present in minute amounts.

9. *PHYSICAL AND CHEMICAL PROPERTIES*

Appearance and Odor: Silver grey to grey black with metallic luster.

Boiling Point: Not applicable.

Melting Point: Approximately 2800o F.

pH: Not applicable.

Specific Gravity (at 15.6o C): Not applicable.

Density (at 15.6o C): Not applicable.

Vapor Pressure: Not applicable.

Vapor Density (air=1): Not applicable.

% Volatile, by Volume: Not applicable.

Solubility in Water: Insoluble.

Evaporation Rate (Butyl Acetate=1): Not applicable.

Other Physical and Chemical Data: None.

10. STABILITY AND REACTIVITY

Stability: **Stable.**

Conditions to Avoid: **Steel at temperatures above melting point may liberate fumes containing oxides of iron and alloying elements. Avoid generation of airborne fume.**

Hazardous Polymerization: **Will not occur.**

Incompatibility (Materials to Avoid): **Reacts with strong acids to form hydrogen gas. Do not store near strong oxidizers.**

Hazardous Decomposition Products: **Metallic fumes may be produces during welding, burning, grinding, and possibly machining or any situation with the potential for thermal decomposition. Refer to ANSI Z49.1.**

11. TOXICOLOGOCAL INFORMATION

The primary component of this product is iron. Long term exposure to iron dusts or fumes can result in a condition called siderosis which is considered to be a benign pneumoconiosis. Symptoms may include chronic bronchitis, emphysema, and shortness of breath upon exertion. Penetration of iron particles in the skin or eye may cause an exogenous or ocular siderosis which may be characterized by a red-brown pigmentation of the affected area. Ingestion overexposures to iron may affect the gastrointestinal, nervous, and hematopoietic system and the liver. Iron and steel founding, but not iron or iron oxide, has been listed as carcinogenic (Group 1) by IARC.

When this product is welded, fumes are generated. Welding fumes may be different in composition from the original welding product, with the chief component being ordinary oxides of the metal being welded. Chronic health effects (including cancer) have been associated with the fumes and dusts of individual component metals (see above), and welding fumes as a general category have been listed by IARC as a carcinogen (Group 2B). There is also limited evidence that welding fumes may cause adverse reproductive and fetal effects.

Evidence is stronger where welding materials contain known reproductive toxins, e.g. lead, which may be present in the coating material of this product.

Breathing fumes of dusts of this product may result in metal fume fever, which is an illness produced by inhaling metal oxides. These oxides are produced by heating various metals including cadmium, zinc, magnesium, copper, antimony, nickel, cobalt, manganese, tin, lead, beryllium, silver, chromium, aluminum, selenium, iron, and arsenic. The most common agents involved are zinc and copper.

This product may contain small amounts of manganese. Prolonged exposure to manganese dusts or fumes is associated with "manganism", a Parkinson-like syndrome characterized by a variety of neurological symptom including muscle spasms, gait disturbances, tremors, and psychoses.

This product may contain small amounts of cadmium. Primary target organs for cadmium overexposure are the lung and the kidney. Because of its cumulative nature, chronic cadmium poisoning can cause serious disease which takes many years to develop and may continue to progress despite cessation of exposure. Progression of the disease may not reflect current exposure conditions. It is also capable of causing a painful osteomalacia called "Itai-Itai" in postmenopausal women, and has caused developmental effects and/or reproductive effects in male and female animals. Cadmium is a listed carcinogen by NTP, OSHA, and IARC (Group 1).

This product may contain small amounts of chromium. Prolonged and repeated overexposure to chromium dusts or fumes may cause skin ulcers, nasal irritation and ulceration, kidney damage and cancer of the respiratory system. Chromium is a skin sensitizer. Cancer is generally attributed to the hexavalent (+6) form of chromium which is listed as a carcinogen by NTP and IARC (Group 1).

This product may contain small amounts of nickel. Prolonged and repeated contact with nickel may cause sensitization dermatitis. Inhalation of nickel compounds has caused lung damage as well as sinus, nasal and lung cancer in laboratory animals. Nickel is a listed carcinogen by NTP and IARC (Group 1).

This product may contain small amounts of vanadium. Adverse effects from dermal, inhalation or parenteral exposure to various vanadium compounds have been reported. The major target for vanadium pentoxide toxicity is the respiratory tract. Fumes or dust can cause severe eye and respiratory irritation and systemic effects. Chronic bronchitis, green tongue, conjunctivitis, pharyngitis, rhinitis, rales, chronic productive cough, and tightness of the chest have been reported following overexposure. Allergic reactions resulting from skin and inhalation exposures have also been reported. A statistical association between vanadium air levels and lung cancer has been suggested, but vanadium currently is not regarded as a human carcinogen.

This product may contain small amounts of lead. Lead can accumulate in the body. Consequently, exposure to fumes or dust may produce signs of polyneuritis, diminished vision and peripheral neuropathy, such as tingling and loss of feeling in fingers, arms and legs. Lead is a known reproductive and developmental toxin. It is also associated with the central nervous system disorders, anemia, and kidney dysfunction and neurobehavioral abnormalities. The brain is a major target organ for lead exposure. Elemental lead is listed as an IARC 2B carcinogen.

This product may contain small amounts of copper. Copper dust and fumes can irritate the eyes, nose and throat causing coughing, wheezing, nosebleeds, ulcers and metal fume fever. Other effects from repeated inhalation of copper fumes include a metallic or sweet

taste, and discoloration of skin, teeth or hair. Copper also may cause an allergic skin reaction. Overexposure to copper can affect the liver.
This product may contain zinc. Subjecting zinc or alloys containing zinc to high temperatures in the presence of oxygen (such as occurs during welding) will cause the formation of zinc oxide. Exposure to zinc oxide fumes or dusts can result in a flu-like illness called metal fume fever. Early symptoms may include a sweet or metallic taste in the mouth, dryness and irritation of the throat and coughing. These symptoms may progress to shortness of breath, headache, fever, chills, muscle aches, nausea, vomiting, weakness, fatigue and profuse sweating. The attack may last 6-48 hours and is more likely to occur after a period away from the work area.
This product may contain small amounts of silicon. Silicon exposure may produce X-ray changes in the lungs without disability.

12. ***ECOLOGOCAL INFORMATION***

Aquatic Eco toxicological Data: No specific information available on this product.

Environmental Fate Data: No specific information available on this product.

13. ***DISPOSAL CONSIDERATIONS***

Recovery and reuse, rather than disposal, should be the ultimate goal of handling efforts. Dispose in accordance with federal, state, and local health and environmental regulations. Prevent materials from entering drains, sewers, or waterways.

14. ***TRANSPORT INFORMATION***

DOT Proper Shipping Name: Not regulated.

DOT Hazard Classification: Not regulated.

UN/NA Number: Not applicable.

DOT Packing Group: Not applicable.

Labeling Requirements: Not applicable.

Placards: Not applicable.

DOT Hazardous Substance: **Not applicable.**

DOT Marine Pollutant: **Not applicable.**

15. ***REGULATORY INFORMATION***

This product is not hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29 CFR 1910.1200. However, dusts and fumes from this product may be combustible or hazardous and require protection to comply with applicable federal, state and local laws and regulation.

California Proposition 65: This product contains chemicals (Antimony [oxide], Arsenic, Beryllium, Chromium [hexavalent] Cobalt, Cadmium, Lead, Nickel) known to the State of California to cause birth defects or other reproductive harm.

Massachusetts Substance List: Aluminum, Antimony, Arsenic, Beryllium, Boron, Cadmium, Chromium, Cobalt, Copper, Lead, Magnesium, Manganese, Molybdenum, Nickel, Nitrogen, Phosphorus, Selenium, Silicon, Sulfur, Tin, Titanium, Tungsten, Vanadium, Zinc.

Pennsylvania Hazardous Substance List: Aluminum, Antimony, Arsenic, Beryllium, Boron, Cadmium, Chromium, Cobalt, Copper, Lead, Magnesium, Manganese, Molybdenum, Nickel, Nitrogen, Phosphorus, Selenium, Silicon, Sulfur, Tin, Titanium, Tungsten, Vanadium, Zinc.

New Jersey Hazardous Substance List: Aluminum, Antimony, Arsenic, Beryllium, Boron, Cadmium, Chromium, Cobalt, Copper, Lead, Magnesium, Manganese, Molybdenum, Nickel, Nitrogen, Phosphorus, Selenium, Silicon, Sulfur, Tin, Titanium, Tungsten, Vanadium, Zinc.

16. *OTHER INFORMATION*

NFPA HAZARD RATING: Health: 1
Fire: 0
Reactivity: 0

ZINC TABLE:

Class (ASTM)	Weight (%)
Brite	0
Regular	0.1-2.0
Class 1	0.5-3.0
Class 3 or A	3.0-10.0
Class B	6.0-12.0
Class C	8.0-14.0

Date Previous Revision: None.
Date This Revision: 5/20/2015.
Revision Summary: New SDS.

The preceding information is believed to be correct and current as of the date of preparation of this Safety Data Sheet. Since the use of this information and the conditions of use of this product are not within the control of WIRE-BOND, it is the user's obligation to assure safe use of this product.

SAFETY DATA SHEET
THE DOW CHEMICAL COMPANY

Product name: GREAT STUFF PRO™ Gaps & Cracks Insulating Foam Sealant 24oz HC EF RU 12ct

Issue Date: 01/04/2016

Print Date: 06/10/2016

THE DOW CHEMICAL COMPANY encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

1. IDENTIFICATION

Product name: GREAT STUFF PRO™ Gaps & Cracks Insulating Foam Sealant 24oz HC EF RU 12ct

Recommended use of the chemical and restrictions on use
Identified uses: Polyurethane foam.

COMPANY IDENTIFICATION
THE DOW CHEMICAL COMPANY
2030 WILLARD H DOW CENTER
MIDLAND MI 48674-0000
UNITED STATES

Customer Information Number: 800-258-2436
SDSQuestion@dow.com

EMERGENCY TELEPHONE NUMBER
24-Hour Emergency Contact: CHEMTREC +1 800-424-9300
Local Emergency Contact: 800-424-9300

2. HAZARDS IDENTIFICATION

Hazard classification
This material is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.
Flammable aerosols - Category 2
Gases under pressure - Liquefied gas
Acute toxicity - Category 4 - Inhalation
Skin irritation - Category 2
Eye irritation - Category 2A
Respiratory sensitisation - Category 1
Skin sensitisation - Category 1
Effects on or via lactation
Specific target organ toxicity - single exposure - Category 3
Specific target organ toxicity - repeated exposure - Category 2 - Inhalation

Label elements
Hazard pictograms

® ™ Trademark of The Dow Chemical Company ("Dow") or an affiliated company of Dow



Signal word: **DANGER!**

Hazards
Flammable aerosol.
Contains gas under pressure; may explode if heated.
Causes skin irritation.
May cause an allergic skin reaction.
Causes serious eye irritation.
Harmful if inhaled.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause respiratory irritation.
May cause harm to breast-fed children.
May cause damage to organs (Respiratory Tract) through prolonged or repeated exposure if inhaled.

Precautionary statements

Prevention
Obtain special instructions before use.
Keep away from heat/sparks/open flames/hot surfaces. No smoking.
Do not spray on an open flame or other ignition source.
Pressurized container: Do not pierce or burn, even after use.
Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
Avoid contact during pregnancy/ while nursing.
Wash skin thoroughly after handling.
Do not eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
Contaminated work clothing should not be allowed out of the workplace.
Wear protective gloves/ eye protection/ face protection.
In case of inadequate ventilation wear respiratory protection.

Response
IF ON SKIN: Wash with plenty of soap and water.
IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
IF exposed or concerned: Get medical advice/ attention.
If skin irritation or rash occurs: Get medical advice/ attention.
If eye irritation persists: Get medical advice/ attention.
Take off contaminated clothing and wash before reuse.

Storage
Store in a well-ventilated place. Keep container tightly closed.
Store locked up.
Protect from sunlight. Do not expose to temperatures exceeding 50 °C/ 122 °F.

Disposal
Dispose of contents/ container to an approved waste disposal plant.

Other hazards
Water Reactive

3. COMPOSITION/INFORMATION ON INGREDIENTS

This product is a mixture.

Component	CASRN	Concentration
Polymethylenepolyphenylisocyanate, propoxylated glycerin polymer	57029-46-6	>= 30.0 - <= 60.0 %
Polymethylenepolyphenyl polyisocyanate, polypropyleneglycol copolymer	53862-89-8	>= 5.0 - <= 10.0 %
Diphenylmethane Diisocyanate, isomers and homologues	9016-87-9	>= 10.0 - <= 30.0 %
Paraffin waxes and Hydrocarbon waxes, chlorinated	63449-39-8	>= 5.0 - <= 10.0 %
Isobutane	75-28-5	>= 3.0 - <= 7.0 %
Propane	74-98-6	>= 1.0 - <= 5.0 %
Methyl ether	115-10-6	>= 1.0 - <= 5.0 %
4,4' -Methylenediphenyl diisocyanate	101-68-8	>= 7.0 - <= 13.0 %
N,N'-Dimorpholinodiethylether	6425-39-4	>= 0.5 - <= 5.0 %

Note
Note: CAS 101-68-8 is an MDI isomer that is part of CAS 9016-87-9.

4. FIRST AID MEASURES

Description of first aid measures
General advice: First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Inhalation: Move person to fresh air. If not breathing, give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask, etc). If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility.

Skin contact: Remove material from skin immediately by washing with soap and plenty of water. Remove contaminated clothing and shoes while washing. Seek medical attention if irritation persists. Wash clothing before reuse. An MDI skin decontamination study demonstrated that cleaning very soon after exposure is important, and that a polyglycol-based skin cleanser or corn oil may be more effective than soap and water. Discard items which cannot be decontaminated, including leather articles such as shoes, belts and watchbands. Suitable emergency safety shower facility should be available in work area.

Eye contact: Immediately flush eyes with water; remove contact lenses, if present, after the first 5 minutes, then continue flushing eyes for at least 15 minutes. Obtain medical attention without delay, preferably from an ophthalmologist. Suitable emergency eye wash facility should be immediately available.

Ingestion: If swallowed, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.

Most important symptoms and effects, both acute and delayed: Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

Indication of any immediate medical attention and special treatment needed
Notes to physician: Excessive exposure may aggravate preexisting asthma and other respiratory disorders (e.g. emphysema, bronchitis, reactive airways dysfunction syndrome). Repeated excessive exposure may aggravate preexisting lung disease. Maintain adequate ventilation and oxygenation of the patient. May cause respiratory sensitization or asthma-like symptoms. Bronchodilators, expectorants and antitussives may be of help. Treat bronchospasm with inhaled beta2 agonist and oral or parenteral corticosteroids. Respiratory symptoms, including pulmonary edema, may be delayed. Persons receiving significant exposure should be observed 24-48 hours for signs of respiratory distress. Exposure may increase "myocardial irritability". Do not administer sympathomimetic drugs such as epinephrine unless absolutely necessary. If you are sensitized to diisocyanates, consult your physician regarding working with other respiratory irritants or sensitizers. Although cholinesterase depression has been reported with this material, it is not of benefit in determining exposure and need not be considered in the treatment of persons exposed to the material. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. FIREFIGHTING MEASURES

Suitable extinguishing media: Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.

Unsuitable extinguishing media: Do not use direct water stream. Straight or direct water streams may not be effective to extinguish fire.

Special hazards arising from the substance or mixture
Hazardous combustion products: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Nitrogen oxides. Isocyanates. Hydrogen chloride. Carbon monoxide. Carbon dioxide. Hydrogen cyanide.

Unusual Fire and Explosion Hazards: Contains flammable propellant. Aerosol cans exposed to fire can rupture and become flaming projectiles. Propellant release may result in a fireball. Vapors are heavier than air and may travel a long distance and accumulate in low lying areas. Ignition and/or flash back may occur. Dense smoke is produced when product burns.

Advice for firefighters
Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Stay upwind. Keep out of low areas where gases (fumes) can accumulate. Water may not be effective in extinguishing fire. Do not use direct water stream. May spread fire. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Eliminate ignition sources. Move container from fire area if this is possible without hazard. Use water spray to cool fire-exposed containers and fire-affected zone until fire is out.

Special protective equipment for firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Evacuate area. Only trained and properly protected personnel must be involved in clean-up operations. Keep personnel out of low areas. Keep personnel out of confined or poorly ventilated areas. Keep upwind of spill. Ventilate area of leak or spill. No smoking in area. For large spills, warn public of downwind explosion hazard. Check area with combustible gas detector before reentering area. Ground and bond all containers and handling equipment. Eliminate all sources of ignition in vicinity of spill or released vapor to avoid fire or explosion. Vapor explosion hazard. Keep out of sewers. See Section 10 for more specific information. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection. Refer to section 7, Handling, for additional precautionary measures.

Environmental precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

Methods and materials for containment and cleaning up: Contain spilled material if possible. Ground and bond all containers and handling equipment. Isolate area until gas has dispersed. Use non-sparking tools in cleanup operations. Eliminate all sources of ignition in vicinity of spill or released vapor to avoid fire or explosion. Check area with combustible gas detector before reentering area. Ground and bond all containers and handling equipment. Collect in suitable and properly labeled containers. Absorb with materials such as: Clay. Dirt. Milsorb®. Sand. Sawdust. Vermiculite. See Section 10 for more specific information. See Section 13, Disposal Considerations, for additional information.

7. HANDLING AND STORAGE

Precautions for safe handling: Keep away from heat, sparks and flame. Avoid contact with eyes. Avoid contact with skin and clothing. Avoid prolonged or repeated contact with skin. Avoid breathing

vapor. Wash thoroughly after handling. Keep container closed. Use only with adequate ventilation. Keep out of reach of children. No smoking, open flames or sources of ignition in handling and storage area. Vapors are heavier than air and may travel a long distance and accumulate in low lying areas. Ignition and/or flash back may occur. Contents under pressure. Do not puncture or incinerate container. Containers, even those that have been emptied, can contain vapors. Do not cut, drill, grind, weld, or perform similar operations on or near empty containers. Do not enter confined spaces unless adequately ventilated. Never use air pressure for transferring product. Use of non-sparking or explosion-proof equipment may be necessary, depending upon the type of operation. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Conditions for safe storage: Minimize sources of ignition, such as static build-up, heat, spark or flame. Store in a dry place. See Section 10 for more specific information.

Storage stability

Storage temperature:	**Shelf life: Use within**
49 °C (120 °F)	12 Month

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure limits are listed below, if they exist.

Component	Regulation	Type of listing	Value/Notation
Isobutane	ACGIH	STEL	1,000 ppm
Propane	ACGIH		Asphyxiant
	OSHA Z-1	TWA	1,800 mg/m3 1,000 ppm
Methyl ether	US WEEL	TWA	1,000 ppm
4,4' -Methylenediphenyl diisocyanate	ACGIH	TWA	0.005 ppm
	OSHA Z-1	C	0.2 mg/m3 0.02 ppm
	NIOSH REL	TWA	0.05 mg/m3 0.005 ppm
	NIOSH REL	C	0.2 mg/m3 0.02 ppm

Exposure controls

Engineering controls: Use only with adequate ventilation. Local exhaust ventilation may be necessary for some operations. Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines. Exhaust systems should be designed to move the air away from the source of vapor/aerosol generation and people working at this point. The odor and irritancy of this material are inadequate to warn of excessive exposure. Lethal concentrations may exist in areas with poor ventilation.

Individual protection measures

Eye/face protection: Use safety glasses (with side shields).

Skin protection

Hand protection: Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Butyl rubber. Chlorinated polyethylene. Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Examples of acceptable glove barrier materials include: Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Viton. Polyvinyl chloride ("PVC" or "vinyl"). NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity,

thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.
Other protection: Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

Respiratory protection: Atmospheric levels should be maintained below the exposure guideline. When atmospheric levels may exceed the exposure guideline, use an approved air-purifying respirator equipped with an organic vapor sorbent and a particle filter. For situations where the atmospheric levels may exceed the level for which an air-purifying respirator is effective, use a positive-pressure air-supplying respirator (air line or self-contained breathing apparatus). For emergency response or for situations where the atmospheric level is unknown, use an approved positive-pressure self-contained breathing apparatus or positive-pressure air line with auxiliary self-contained air supply. In confined or poorly ventilated areas, use an approved self-contained breathing apparatus or positive pressure air line with auxiliary self-contained air supply.
The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	
Physical state	Foam
Color	Orange
Odor	Odorless
Odor Threshold	No test data available
pH	Not applicable
Melting point/range	No test data available
Freezing point	No test data available
Boiling point (760 mmHg)	Not applicable
Flash point	**closed cup** -104 °C (-155 °F) *Estimated.*
Evaporation Rate (Butyl Acetate = 1)	No test data available
Flammability (solid, gas)	No data available
Lower explosion limit	No test data available
Upper explosion limit	No test data available
Vapor Pressure	1,100 kPa at 55 °C (131 °F) *Supplier*
Relative Vapor Density (air = 1)	No test data available
Relative Density (water = 1)	1.06 *Calculated.*
Water solubility	Insoluble
Partition coefficient: n-octanol/water	No data available
Auto-ignition temperature	No test data available
Decomposition temperature	No test data available
Kinematic Viscosity	Not applicable
Explosive properties	Not explosive
Oxidizing properties	No

Molecular weight No data available

NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY AND REACTIVITY

Reactivity: No data available

Chemical stability: Stable under recommended storage conditions. See Storage, Section 7. Unstable at elevated temperatures.

Possibility of hazardous reactions: Can occur. Exposure to elevated temperatures can cause product to decompose and generate gas. This can cause pressure build-up and/or rupturing of closed containers. Acids.

Conditions to avoid: Avoid temperatures above 50 °C
Elevated temperatures can cause container to vent and/or rupture. Exposure to elevated temperatures can cause product to decompose.

Incompatible materials: Avoid contact with: Acids. Alcohols. Amines. Ammonia. Bases. Metal compounds. Strong oxidizers. Products based on diisocyanates like TDI and MDI react with many materials to release heat. The reaction rate increases with temperature as well as with increased contact; these reactions can become violent. Contact is increased by stirring or if the other material acts as a solvent. Products based on diisocyanates such as TDI and MDI are not soluble in water and will sink to the bottom, but react slowly at the interface. The reaction forms carbon dioxide gas and a layer of solid polyurea. Reaction with water will generate carbon dioxide and heat.

Hazardous decomposition products: Decomposition products depend upon temperature, air supply and the presence of other materials. Toxic gases are released during decomposition.

11. TOXICOLOGICAL INFORMATION

Toxicological information appears in this section when such data is available.

Acute toxicity

Acute oral toxicity
Low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury. Observations in animals include: Gastrointestinal irritation.

As product: Single dose oral LD50 has not been determined.

LD50, Rat, > 2,000 mg/kg Estimated.

Acute dermal toxicity
Prolonged skin contact is unlikely to result in absorption of harmful amounts.

As product: The dermal LD50 has not been determined.

LD50, Rabbit, > 2,000 mg/kg Estimated.

Acute inhalation toxicity
In confined or poorly ventilated areas, vapor can easily accumulate and can cause unconsciousness and death due to displacement of oxygen. Excessive exposure may cause irritation to upper respiratory tract (nose and throat) and lungs. May cause pulmonary edema (fluid in the lungs.) Effects may be delayed. May cause central nervous system depression. Symptoms of excessive exposure may be anesthetic or narcotic effects; dizziness and drowsiness may be observed. Excessive exposure may increase sensitivity to epinephrine and increase myocardial irritability (irregular heartbeats). Decreased lung function has been associated with overexposure to isocyanates.

The LC50 has not been determined.,

Skin corrosion/irritation
Prolonged contact may cause moderate skin irritation with local redness.
Material may stick to skin causing irritation upon removal.
May stain skin.

Serious eye damage/eye irritation
May cause eye irritation.
May cause slight temporary corneal injury.

Sensitization
Skin contact may cause an allergic skin reaction.
Animal studies have shown that skin contact with isocyanates may play a role in respiratory sensitization.

May cause allergic respiratory reaction.
MDI concentrations below the exposure guidelines may cause allergic respiratory reactions in individuals already sensitized.
Asthma-like symptoms may include coughing, difficult breathing and a feeling of tightness in the chest.
Occasionally, breathing difficulties may be life threatening.

Specific Target Organ Systemic Toxicity (Single Exposure)
May cause respiratory irritation.
Route of Exposure: Inhalation

Specific Target Organ Systemic Toxicity (Repeated Exposure)
Tissue injury in the upper respiratory tract and lungs has been observed in laboratory animals after repeated excessive exposures to MDI/polymeric MDI aerosols.
Contains component(s) which have been reported to cause effects on the following organs in animals:
kidney
Liver.

Carcinogenicity
Lung tumors have been observed in laboratory animals exposed to respirable aerosol droplets of MDI/Polymeric MDI (6 mg/m3) for their lifetime. Tumors occurred concurrently with respiratory irritation and lung injury. Current exposure guidelines are expected to protect against these effects reported for MDI.

Teratogenicity
In laboratory animals, MDI/polymeric MDI did not cause birth defects; other fetal effects occurred only at high doses which were toxic to the mother.

Reproductive toxicity
Based on information for component(s): May cause harm to breastfed babies.

Mutagenicity
In vitro genetic toxicity studies were negative for component(s) tested. Genetic toxicity data on MDI are inconclusive. MDI was weakly positive in some in vitro studies; other in vitro studies were negative. Animal mutagenicity studies were predominantly negative.

Aspiration Hazard
Based on physical properties, not likely to be an aspiration hazard.

Carcinogenicity

Component	List	Classification
Paraffin waxes and Hydrocarbon waxes, chlorinated	IARC	Group 2B: Possibly carcinogenic to humans
	US NTP	Reasonably anticipated to be a human carcinogen

12. ECOLOGICAL INFORMATION

Ecotoxicological information appears in this section when such data is available.

Toxicity

Polymethylenepolyphenylisocyanate, propoxylated glycerin polymer

Acute toxicity to fish
For this family of materials:
Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

Polymethylenepolyphenyl polyisocyanate, polypropyleneglycol copolymer

Acute toxicity to fish
Not expected to be acutely toxic to aquatic organisms.

Diphenylmethane Diisocyanate, isomers and homologues

Acute toxicity to fish
The measured ecotoxicity is that of the hydrolyzed product, generally under conditions maximizing production of soluble species.
Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).
Based on information for a similar material:
LC50, Danio rerio (zebra fish), static test, 96 Hour, > 1,000 mg/l, OECD Test Guideline 203 or Equivalent

Acute toxicity to aquatic invertebrates
Based on information for a similar material:

EC50, Daphnia magna (Water flea), static test, 24 Hour, > 1,000 mg/l, OECD Test Guideline 202 or Equivalent

Acute toxicity to algae/aquatic plants
Based on information for a similar material:
NOEC, Desmodesmus subspicatus (green algae), static test, 72 Hour, Growth rate inhibition, 1,640 mg/l, OECD Test Guideline 201 or Equivalent

Toxicity to bacteria
Based on information for a similar material:
EC50, activated sludge, static test, 3 Hour, Respiration rates., > 100 mg/l

Toxicity to soil-dwelling organisms
EC50, Eisenia fetida (earthworms), Based on information for a similar material:, 14 d, > 1,000 mg/kg

Toxicity to terrestrial plants
EC50, Avena sativa (oats), Growth inhibition, 1,000 mg/l
EC50, Lactuca sativa (lettuce), Growth inhibition, 1,000 mg/l

Paraffin waxes and Hydrocarbon waxes, chlorinated

Acute toxicity to fish
Material is highly toxic to aquatic organisms on an acute basis (LC50/EC50 between 0.1 and 1 mg/L in the most sensitive species tested).
LC50, Oncorhynchus mykiss (rainbow trout), 96 Hour, > 0.1 mg/l

Isobutane

Acute toxicity to fish
No relevant data found.

Propane

Acute toxicity to fish
No relevant data found.

Methyl ether

Acute toxicity to fish
Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).
LC50, Poecilia reticulata (guppy), semi-static test, 96 Hour, > 4,000 mg/l

Acute toxicity to aquatic invertebrates
LC50, Daphnia magna (Water flea), 48 Hour, > 4,000 mg/l, OECD Test Guideline 202 or Equivalent

4,4' -Methylenediphenyl diisocyanate

Acute toxicity to fish
The measured ecotoxicity is that of the hydrolyzed product, generally under conditions maximizing production of soluble species.
Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).
Based on information for a similar material:
LC50, Danio rerio (zebra fish), static test, 96 Hour, > 1,000 mg/l, OECD Test Guideline 203 or Equivalent

Acute toxicity to aquatic invertebrates
Based on information for a similar material:
EC50, Daphnia magna (Water flea), static test, 24 Hour, > 1,000 mg/l, OECD Test Guideline 202 or Equivalent

Acute toxicity to algae/aquatic plants
Based on information for a similar material:
NOEC, Desmodesmus subspicatus (green algae), static test, 72 Hour, Growth rate inhibition, 1,640 mg/l, OECD Test Guideline 201 or Equivalent

Toxicity to bacteria
Based on information for a similar material:
EC50, activated sludge, static test, 3 Hour, Respiration rates., > 100 mg/l

Toxicity to soil-dwelling organisms
EC50, Eisenia fetida (earthworms), Based on information for a similar material:, 14 d, > 1,000 mg/kg

Toxicity to terrestrial plants
EC50, Avena sativa (oats), Growth inhibition, 1,000 mg/l
EC50, Lactuca sativa (lettuce), Growth inhibition, 1,000 mg/l

N,N'-Dimorpholinodiethylether

Acute toxicity to fish
Material is practically non-toxic to fish on an acute basis (LC50 > 100 mg/L).
May increase pH of aquatic systems to > pH 10 which may be toxic to aquatic organisms.
LC50, Danio rerio (zebra fish), static test, 96 Hour, > 2,150 mg/l, OECD Test Guideline 203 or Equivalent

Acute toxicity to aquatic invertebrates
EC50, Daphnia (water flea), static test, 48 Hour, > 100 mg/l, OECD Test Guideline 202 or Equivalent

Acute toxicity to algae/aquatic plants
ErC50, Algae, static test, 72 Hour, > 100 mg/l, OECD Test Guideline 201 or Equivalent

Toxicity to bacteria
EC50, Bacteria, static test, 3 Hour, 100 mg/l, activated sludge test (OECD 209)

Persistence and degradability

Polymethylenepolyphenylisocyanate, propoxylated glycerin polymer
Biodegradability: For this family of materials: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.

Polymethylenepolyphenyl polyisocyanate, polypropyleneglycol copolymer
Biodegradability: Expected to degrade slowly in the environment.

Diphenylmethane Diisocyanate, isomers and homologues
Biodegradability: In the aquatic and terrestrial environment, material reacts with water forming predominantly insoluble polyureas which appear to be stable. In the atmospheric

environment, material is expected to have a short tropospheric half-life, based on calculations and by analogy with related diisocyanates.
10-day Window: Not applicable
Biodegradation: 0 %
Exposure time: 28 d
Method: OECD Test Guideline 302C or Equivalent

Paraffin waxes and Hydrocarbon waxes, chlorinated

Biodegradability: Expected to degrade slowly in the environment.

Theoretical Oxygen Demand: 2.89 mg/mg

Isobutane

Biodegradability: Biodegradation may occur under aerobic conditions (in the presence of oxygen).

Theoretical Oxygen Demand: 3.58 mg/mg

Photodegradation
Test Type: Half-life (indirect photolysis)
Sensitizer: OH radicals
Atmospheric half-life: 4.4 d
Method: Estimated.

Propane

Biodegradability: No relevant data found.

Theoretical Oxygen Demand: 3.64 mg/mg

Photodegradation
Test Type: Half-life (indirect photolysis)
Sensitizer: OH radicals
Atmospheric half-life: 8.4 d
Method: Estimated.

Methyl ether

Biodegradability: Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.
10-day Window: Fail
Biodegradation: 5 %
Exposure time: 28 d
Method: OECD Test Guideline 301A or Equivalent

Theoretical Oxygen Demand: 2.08 mg/mg

Photodegradation
Test Type: Half-life (indirect photolysis)
Sensitizer: OH radicals
Atmospheric half-life: 6.4 d
Method: Estimated.

4,4' -Methylenediphenyl diisocyanate

Biodegradability: In the aquatic and terrestrial environment, material reacts with water forming predominantly insoluble polyureas which appear to be stable. In the atmospheric environment, material is expected to have a short tropospheric half-life, based on calculations and by analogy with related diisocyanates.
10-day Window: Not applicable
Biodegradation: 0 %
Exposure time: 28 d
Method: OECD Test Guideline 302C or Equivalent

N,N'-Dimorpholinodiethylether

Biodegradability: Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.
10-day Window: Fail
Biodegradation: 0 - 10 %
Exposure time: 28 d
Method: OECD Test Guideline 301A or Equivalent

Theoretical Oxygen Demand: 2.49 mg/mg

Photodegradation
Test Type: Half-life (indirect photolysis)
Sensitizer: OH radicals
Atmospheric half-life: 0.03 d
Method: Estimated.

Bioaccumulative potential

Polymethylenepolyphenylisocyanate, propoxylated glycerin polymer

Bioaccumulation: No relevant data found.

Polymethylenepolyphenyl polyisocyanate, polypropyleneglycol copolymer

Bioaccumulation: In the aquatic and terrestrial environment, movement is expected to be limited by its reaction with water forming predominantly insoluble polyureas.

Diphenylmethane Diisocyanate, isomers and homologues

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3). Reacts with water. In the aquatic and terrestrial environment, movement is expected to be limited by its reaction with water forming predominantly insoluble polyureas.
Bioconcentration factor (BCF): 92 Cyprinus carpio (Carp) 28 d

Paraffin waxes and Hydrocarbon waxes, chlorinated

Bioaccumulation: Bioconcentration potential is low (BCF less than 100 or log Pow greater than 7).
Partition coefficient: n-octanol/water(log Pow): 7.4 Estimated.

Isobutane

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partition coefficient: n-octanol/water(log Pow): 2.76 Measured

Propane

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partition coefficient: n-octanol/water(log Pow): 2.36 Measured

Methyl ether

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partition coefficient: n-octanol/water(log Pow): 0.10 Measured

4,4' -Methylenediphenyl diisocyanate

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3). Reacts with water. In the aquatic and terrestrial environment, movement is expected to be limited by its reaction with water forming predominantly insoluble polyureas.
Bioconcentration factor (BCF): 92 Cyprinus carpio (Carp) 28 d

N,N'-Dimorpholinodiethylether

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partition coefficient: n-octanol/water(log Pow): 0.5 Estimated.

Mobility in soil

Polymethylenepolyphenylisocyanate, propoxylated glycerin polymer

No relevant data found.

Polymethylenepolyphenyl polyisocyanate, polypropyleneglycol copolymer

In the aquatic and terrestrial environment, movement is expected to be limited by its reaction with water forming predominantly insoluble polyureas.

Diphenylmethane Diisocyanate, isomers and homologues

In the aquatic and terrestrial environment, movement is expected to be limited by its reaction with water forming predominantly insoluble polyureas.

Paraffin waxes and Hydrocarbon waxes, chlorinated

Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process.
Expected to be relatively immobile in soil (Koc > 5000).
Partition coefficient(Koc): > 5000 Estimated.

Isobutane

Potential for mobility in soil is very high (Koc between 0 and 50).
Partition coefficient(Koc): 35 Estimated.

Propane

Potential for mobility in soil is very high (Koc between 0 and 50).
Partition coefficient(Koc): 24 - 460 Estimated.

Methyl ether

Potential for mobility in soil is very high (Koc between 0 and 50).
Partition coefficient(Koc): 1.29 - 14 Estimated.

4,4' -Methylenediphenyl diisocyanate

In the aquatic and terrestrial environment, movement is expected to be limited by its reaction with water forming predominantly insoluble polyureas.

N,N'-Dimorpholinodiethylether

Potential for mobility in soil is low (Koc between 500 and 2000).
Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process.

Partition coefficient(Koc): 784 Estimated.

13. DISPOSAL CONSIDERATIONS

Disposal methods: DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. AS YOUR SUPPLIER, WE HAVE NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION: Composition Information. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Incinerator or other thermal destruction device.

14. TRANSPORT INFORMATION

DOT

Proper shipping name	Aerosols
UN number	UN 1950
Class	2.1
Packing group	

Classification for SEA transport (IMO-IMDG):

Proper shipping name	AEROSOLS
UN number	UN 1950
Class	2.1
Packing group	
Marine pollutant	Paraffin waxes and Hydrocarbon waxes, chlorinated
Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code	Consult IMO regulations before transporting ocean bulk

Classification for AIR transport (IATA/ICAO):

Proper shipping name	Aerosols, flammable
UN number	UN 1950
Class	2.1
Packing group	

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. REGULATORY INFORMATION

OSHA Hazard Communication Standard
This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312
Acute Health Hazard
Chronic Health Hazard
Fire Hazard

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313
This product contains the following substances which are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and which are listed in 40 CFR 372.

Components	**CASRN**
Diphenylmethane Diisocyanate, isomers and homologues	9016-87-9
4,4' -Methylenediphenyl diisocyanate	101-68-8

Pennsylvania Worker and Community Right-To-Know Act:
The following chemicals are listed because of the additional requirements of Pennsylvania law:

Components	**CASRN**
Isobutane	75-28-5
Propane	74-98-6
Methyl ether	115-10-6

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)
This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

United States TSCA Inventory (TSCA)
All components of this product are in compliance with the inventory listing requirements of the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

16. OTHER INFORMATION

Revision
Identification Number: 101216112 / A001 / Issue Date: 01/04/2016 / Version: 4.0
Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend

ACGIH	USA. ACGIH Threshold Limit Values (TLV)
Asphyxiant	Asphyxiant
C	Ceiling
NIOSH REL	USA. NIOSH Recommended Exposure Limits
OSHA Z-1	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
STEL	Short-term exposure limit
TWA	8-hour, time-weighted average
US WEEL	USA. Workplace Environmental Exposure Levels (WEEL)

Information Source and References
This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

THE DOW CHEMICAL COMPANY urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.

SAFETY DATA SHEET
THE DOW CHEMICAL COMPANY

Product name: GREAT STUFF PRO™ Gaps & Cracks Insulating Foam Sealant 24oz HC ES GUN 12ct

Issue Date: 01/04/2016

Print Date: 06/10/2016

THE DOW CHEMICAL COMPANY encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

1. IDENTIFICATION

Product name: GREAT STUFF PRO™ Gaps & Cracks Insulating Foam Sealant 24oz HC ES GUN 12ct

Recommended use of the chemical and restrictions on use
Identified uses: Polyurethane foam.

COMPANY IDENTIFICATION
THE DOW CHEMICAL COMPANY
2030 WILLARD H DOW CENTER
MIDLAND MI 48674-0000
UNITED STATES

Customer Information Number: 800-258-2436
SDSQuestion@dow.com

EMERGENCY TELEPHONE NUMBER
24-Hour Emergency Contact: CHEMTREC +1 800-424-9300
Local Emergency Contact: 800-424-9300

2. HAZARDS IDENTIFICATION

Hazard classification
This material is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.
Flammable aerosols - Category 2
Gases under pressure - Liquefied gas
Acute toxicity - Category 4 - Inhalation
Skin irritation - Category 2
Eye irritation - Category 2A
Respiratory sensitisation - Category 1
Skin sensitisation - Category 1
Effects on or via lactation
Specific target organ toxicity - single exposure - Category 3
Specific target organ toxicity - repeated exposure - Category 2 - Inhalation

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Label elements
Hazard pictograms



Signal word: **DANGER!**

Hazards
Flammable aerosol.
Contains gas under pressure; may explode if heated.
Causes skin irritation.
May cause an allergic skin reaction.
Causes serious eye irritation.
Harmful if inhaled.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause respiratory irritation.
May cause harm to breast-fed children.
May cause damage to organs (Respiratory Tract) through prolonged or repeated exposure if inhaled.

Precautionary statements

Prevention
Obtain special instructions before use.
Keep away from heat/sparks/open flames/hot surfaces. No smoking.
Do not spray on an open flame or other ignition source.
Pressurized container: Do not pierce or burn, even after use.
Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
Avoid contact during pregnancy/ while nursing.
Wash skin thoroughly after handling.
Do not eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
Contaminated work clothing should not be allowed out of the workplace.
Wear protective gloves/ eye protection/ face protection.
In case of inadequate ventilation wear respiratory protection.

Response
IF ON SKIN: Wash with plenty of soap and water.
IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
IF exposed or concerned: Get medical advice/ attention.
If skin irritation or rash occurs: Get medical advice/ attention.
If eye irritation persists: Get medical advice/ attention.
Take off contaminated clothing and wash before reuse.

Storage
Store in a well-ventilated place. Keep container tightly closed.

Store locked up.
Protect from sunlight. Do not expose to temperatures exceeding 50 °C/ 122 °F.

Disposal
Dispose of contents/ container to an approved waste disposal plant.

Other hazards
Water Reactive

3. COMPOSITION/INFORMATION ON INGREDIENTS

This product is a mixture.

Component	CASRN	Concentration
Polymethylenepolyphenylisocyanate, propoxylated glycerin polymer	57029-46-6	>= 30.0 - <= 60.0 %
Polymethylenepolyphenyl polyisocyanate, polypropyleneglycol copolymer	53862-89-8	>= 5.0 - <= 10.0 %
Diphenylmethane Diisocyanate, isomers and homologues	9016-87-9	>= 10.0 - <= 30.0 %
Paraffin waxes and Hydrocarbon waxes, chlorinated	63449-39-8	>= 5.0 - <= 10.0 %
Isobutane	75-28-5	>= 3.0 - <= 7.0 %
Propane	74-98-6	>= 1.0 - <= 5.0 %
Methyl ether	115-10-6	>= 1.0 - <= 5.0 %
4,4' -Methylenediphenyl diisocyanate	101-68-8	>= 7.0 - <= 13.0 %
N,N'-Dimorpholinodiethylether	6425-39-4	>= 0.5 - <= 5.0 %

Note
Note: CAS 101-68-8 is an MDI isomer that is part of CAS 9016-87-9.

4. FIRST AID MEASURES

Description of first aid measures
General advice: First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Inhalation: Move person to fresh air. If not breathing, give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask, etc). If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility.

Skin contact: Remove material from skin immediately by washing with soap and plenty of water. Remove contaminated clothing and shoes while washing. Seek medical attention if irritation persists. Wash clothing before reuse. An MDI skin decontamination study demonstrated that cleaning very soon after exposure is important, and that a polyglycol-based skin cleanser or corn oil may be more effective than soap and water. Discard items which cannot be decontaminated, including leather articles such as shoes, belts and watchbands. Suitable emergency safety shower facility should be available in work area.

Eye contact: Immediately flush eyes with water; remove contact lenses, if present, after the first 5 minutes, then continue flushing eyes for at least 15 minutes. Obtain medical attention without delay, preferably from an ophthalmologist. Suitable emergency eye wash facility should be immediately available.

Ingestion: If swallowed, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.

Most important symptoms and effects, both acute and delayed: Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

Indication of any immediate medical attention and special treatment needed
Notes to physician: Excessive exposure may aggravate preexisting asthma and other respiratory disorders (e.g. emphysema, bronchitis, reactive airways dysfunction syndrome). Repeated excessive exposure may aggravate preexisting lung disease. Maintain adequate ventilation and oxygenation of the patient. May cause respiratory sensitization or asthma-like symptoms. Bronchodilators, expectorants and antitussives may be of help. Treat bronchospasm with inhaled beta2 agonist and oral or parenteral corticosteroids. Respiratory symptoms, including pulmonary edema, may be delayed. Persons receiving significant exposure should be observed 24-48 hours for signs of respiratory distress. Exposure may increase "myocardial irritability". Do not administer sympathomimetic drugs such as epinephrine unless absolutely necessary. If you are sensitized to diisocyanates, consult your physician regarding working with other respiratory irritants or sensitizers. Although cholinesterase depression has been reported with this material, it is not of benefit in determining exposure and need not be considered in the treatment of persons exposed to the material. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. FIREFIGHTING MEASURES

Suitable extinguishing media: Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.

Unsuitable extinguishing media: Do not use direct water stream. Straight or direct water streams may not be effective to extinguish fire.

Special hazards arising from the substance or mixture

Hazardous combustion products: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Nitrogen oxides. Isocyanates. Hydrogen chloride. Carbon monoxide. Carbon dioxide. Hydrogen cyanide.

Unusual Fire and Explosion Hazards: Contains flammable propellant. Aerosol cans exposed to fire can rupture and become flaming projectiles. Propellant release may result in a fireball. Vapors are heavier than air and may travel a long distance and accumulate in low lying areas. Ignition and/or flash back may occur. Dense smoke is produced when product burns.

Advice for firefighters
Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Stay upwind. Keep out of low areas where gases (fumes) can accumulate. Water may not be effective in extinguishing fire. Do not use direct water stream. May spread fire. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Eliminate ignition sources. Move container from fire area if this is possible without hazard. Use water spray to cool fire-exposed containers and fire-affected zone until fire is out.

Special protective equipment for firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Evacuate area. Only trained and properly protected personnel must be involved in clean-up operations. Keep personnel out of low areas. Keep personnel out of confined or poorly ventilated areas. Keep upwind of spill. Ventilate area of leak or spill. No smoking in area. For large spills, warn public of downwind explosion hazard. Check area with combustible gas detector before reentering area. Ground and bond all containers and handling equipment. Eliminate all sources of ignition in vicinity of spill or released vapor to avoid fire or explosion. Vapor explosion hazard. Keep out of sewers. See Section 10 for more specific information. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection. Refer to section 7, Handling, for additional precautionary measures.

Environmental precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

Methods and materials for containment and cleaning up: Contain spilled material if possible. Ground and bond all containers and handling equipment. Isolate area until gas has dispersed. Use non-sparking tools in cleanup operations. Eliminate all sources of ignition in vicinity of spill or released vapor to avoid fire or explosion. Check area with combustible gas detector before reentering area. Ground and bond all containers and handling equipment. Collect in suitable and properly labeled containers. Absorb with materials such as: Clay. Dirt. Milsorb®. Sand. Sawdust. Vermiculite. See Section 10 for more specific information. See Section 13, Disposal Considerations, for additional information.

7. HANDLING AND STORAGE

Precautions for safe handling: Keep away from heat, sparks and flame. Avoid contact with eyes. Avoid contact with skin and clothing. Avoid prolonged or repeated contact with skin. Avoid breathing vapor. Wash thoroughly after handling. Keep container closed. Use only with adequate ventilation. Keep out of reach of children. No smoking, open flames or sources of ignition in handling and storage area. Vapors are heavier than air and may travel a long distance and accumulate in low lying areas. Ignition and/or flash back may occur. Contents under pressure. Do not puncture or incinerate container. Containers, even those that have been emptied, can contain vapors. Do not cut, drill, grind, weld, or perform similar operations on or near empty containers. Do not enter confined spaces unless adequately ventilated. Never use air pressure for transferring product. Use of non-sparking or explosion-proof equipment may be necessary, depending upon the type of operation. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Conditions for safe storage: Minimize sources of ignition, such as static build-up, heat, spark or flame. Store in a dry place. See Section 10 for more specific information.

Storage stability

Storage temperature:	Shelf life: Use within
49 °C (120 °F)	12 Month

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure limits are listed below, if they exist.

Component	Regulation	Type of listing	Value/Notation
Isobutane	ACGIH	STEL	1,000 ppm
Propane	ACGIH		Asphyxiant
	OSHA Z-1	TWA	1,800 mg/m3 1,000 ppm
Methyl ether	US WEEL	TWA	1,000 ppm
4,4' -Methylenediphenyl diisocyanate	ACGIH	TWA	0.005 ppm
	OSHA Z-1	C	0.2 mg/m3 0.02 ppm
	NIOSH REL	TWA	0.05 mg/m3 0.005 ppm
	NIOSH REL	C	0.2 mg/m3 0.02 ppm

Exposure controls

Engineering controls: Use only with adequate ventilation. Local exhaust ventilation may be necessary for some operations. Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines. Exhaust systems should be designed to move the air away from the source of vapor/aerosol generation and people working at this point. The odor and irritancy of this material are inadequate to warn of excessive exposure. Lethal concentrations may exist in areas with poor ventilation.

Individual protection measures

Eye/face protection: Use safety glasses (with side shields).

Skin protection

Hand protection: Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Butyl rubber. Chlorinated polyethylene. Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Examples of acceptable glove

barrier materials include: Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Viton. Polyvinyl chloride ("PVC" or "vinyl"). NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.
Other protection: Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

Respiratory protection: Atmospheric levels should be maintained below the exposure guideline. When atmospheric levels may exceed the exposure guideline, use an approved air-purifying respirator equipped with an organic vapor sorbent and a particle filter. For situations where the atmospheric levels may exceed the level for which an air-purifying respirator is effective, use a positive-pressure air-supplying respirator (air line or self-contained breathing apparatus). For emergency response or for situations where the atmospheric level is unknown, use an approved positive-pressure self-contained breathing apparatus or positive-pressure air line with auxiliary self-contained air supply. In confined or poorly ventilated areas, use an approved self-contained breathing apparatus or positive pressure air line with auxiliary self-contained air supply.
The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	
Physical state	Foam
Color	Orange
Odor	Odorless
Odor Threshold	No test data available
pH	Not applicable
Melting point/range	No test data available
Freezing point	No test data available
Boiling point (760 mmHg)	Not applicable
Flash point	**closed cup** -104 °C (-155 °F) *Estimated.*
Evaporation Rate (Butyl Acetate = 1)	No test data available
Flammability (solid, gas)	No data available
Lower explosion limit	No test data available
Upper explosion limit	No test data available
Vapor Pressure	1,100 kPa at 55 °C (131 °F) *Supplier*
Relative Vapor Density (air = 1)	No test data available
Relative Density (water = 1)	1.06 *Calculated.*
Water solubility	Insoluble
Partition coefficient: n-octanol/water	No data available
Auto-ignition temperature	No test data available

Decomposition temperature	No test data available
Kinematic Viscosity	Not applicable
Explosive properties	Not explosive
Oxidizing properties	No
Molecular weight	No data available

NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY AND REACTIVITY

Reactivity: No data available

Chemical stability: Stable under recommended storage conditions. See Storage, Section 7. Unstable at elevated temperatures.

Possibility of hazardous reactions: Can occur. Exposure to elevated temperatures can cause product to decompose and generate gas. This can cause pressure build-up and/or rupturing of closed containers. Acids.

Conditions to avoid: Avoid temperatures above 50 °C
Elevated temperatures can cause container to vent and/or rupture. Exposure to elevated temperatures can cause product to decompose.

Incompatible materials: Avoid contact with: Acids. Alcohols. Amines. Ammonia. Bases. Metal compounds. Strong oxidizers. Products based on diisocyanates like TDI and MDI react with many materials to release heat. The reaction rate increases with temperature as well as with increased contact; these reactions can become violent. Contact is increased by stirring or if the other material acts as a solvent. Products based on diisocyanates such as TDI and MDI are not soluble in water and will sink to the bottom, but react slowly at the interface. The reaction forms carbon dioxide gas and a layer of solid polyurea. Reaction with water will generate carbon dioxide and heat.

Hazardous decomposition products: Decomposition products depend upon temperature, air supply and the presence of other materials. Toxic gases are released during decomposition.

11. TOXICOLOGICAL INFORMATION

Toxicological information appears in this section when such data is available.

Acute toxicity

Acute oral toxicity

Low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury. Observations in animals include: Gastrointestinal irritation.

As product: Single dose oral LD50 has not been determined.

LD50, Rat, > 2,000 mg/kg Estimated.

Acute dermal toxicity
Prolonged skin contact is unlikely to result in absorption of harmful amounts.

As product: The dermal LD50 has not been determined.

LD50, Rabbit, > 2,000 mg/kg Estimated.

Acute inhalation toxicity
In confined or poorly ventilated areas, vapor can easily accumulate and can cause unconsciousness and death due to displacement of oxygen. Excessive exposure may cause irritation to upper respiratory tract (nose and throat) and lungs. May cause pulmonary edema (fluid in the lungs.) Effects may be delayed. May cause central nervous system depression. Symptoms of excessive exposure may be anesthetic or narcotic effects; dizziness and drowsiness may be observed. Excessive exposure may increase sensitivity to epinephrine and increase myocardial irritability (irregular heartbeats). Decreased lung function has been associated with overexposure to isocyanates.

The LC50 has not been determined.,

Skin corrosion/irritation
Prolonged contact may cause moderate skin irritation with local redness.
Material may stick to skin causing irritation upon removal.
May stain skin.

Serious eye damage/eye irritation
May cause eye irritation.
May cause slight temporary corneal injury.

Sensitization
Skin contact may cause an allergic skin reaction.
Animal studies have shown that skin contact with isocyanates may play a role in respiratory sensitization.

May cause allergic respiratory reaction.
MDI concentrations below the exposure guidelines may cause allergic respiratory reactions in individuals already sensitized.
Asthma-like symptoms may include coughing, difficult breathing and a feeling of tightness in the chest.
Occasionally, breathing difficulties may be life threatening.

Specific Target Organ Systemic Toxicity (Single Exposure)
May cause respiratory irritation.
Route of Exposure: Inhalation

Specific Target Organ Systemic Toxicity (Repeated Exposure)
Tissue injury in the upper respiratory tract and lungs has been observed in laboratory animals after repeated excessive exposures to MDI/polymeric MDI aerosols.
Contains component(s) which have been reported to cause effects on the following organs in animals:
kidney
Liver.

Carcinogenicity

Lung tumors have been observed in laboratory animals exposed to respirable aerosol droplets of MDI/Polymeric MDI (6 mg/m3) for their lifetime. Tumors occurred concurrently with respiratory irritation and lung injury. Current exposure guidelines are expected to protect against these effects reported for MDI.

Teratogenicity
In laboratory animals, MDI/polymeric MDI did not cause birth defects; other fetal effects occurred only at high doses which were toxic to the mother.

Reproductive toxicity
Based on information for component(s): May cause harm to breastfed babies.

Mutagenicity
In vitro genetic toxicity studies were negative for component(s) tested. Genetic toxicity data on MDI are inconclusive. MDI was weakly positive in some in vitro studies; other in vitro studies were negative. Animal mutagenicity studies were predominantly negative.

Aspiration Hazard
Based on physical properties, not likely to be an aspiration hazard.

Carcinogenicity

Component	List	Classification
Paraffin waxes and Hydrocarbon waxes, chlorinated	IARC	Group 2B: Possibly carcinogenic to humans
	US NTP	Reasonably anticipated to be a human carcinogen

12. ECOLOGICAL INFORMATION

Ecotoxicological information appears in this section when such data is available.

Toxicity

Polymethylenepolyphenylisocyanate, propoxylated glycerin polymer

Acute toxicity to fish
For this family of materials:
Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

Polymethylenepolyphenyl polyisocyanate, polypropyleneglycol copolymer

Acute toxicity to fish
Not expected to be acutely toxic to aquatic organisms.

Diphenylmethane Diisocyanate, isomers and homologues

Acute toxicity to fish
The measured ecotoxicity is that of the hydrolyzed product, generally under conditions maximizing production of soluble species.
Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).
Based on information for a similar material:

LC50, Danio rerio (zebra fish), static test, 96 Hour, > 1,000 mg/l, OECD Test Guideline 203 or Equivalent

Acute toxicity to aquatic invertebrates
Based on information for a similar material:
EC50, Daphnia magna (Water flea), static test, 24 Hour, > 1,000 mg/l, OECD Test Guideline 202 or Equivalent

Acute toxicity to algae/aquatic plants
Based on information for a similar material:
NOEC, Desmodesmus subspicatus (green algae), static test, 72 Hour, Growth rate inhibition, 1,640 mg/l, OECD Test Guideline 201 or Equivalent

Toxicity to bacteria
Based on information for a similar material:
EC50, activated sludge, static test, 3 Hour, Respiration rates., > 100 mg/l

Toxicity to soil-dwelling organisms
EC50, Eisenia fetida (earthworms), Based on information for a similar material:, 14 d, > 1,000 mg/kg

Toxicity to terrestrial plants
EC50, Avena sativa (oats), Growth inhibition, 1,000 mg/l
EC50, Lactuca sativa (lettuce), Growth inhibition, 1,000 mg/l

Paraffin waxes and Hydrocarbon waxes, chlorinated

Acute toxicity to fish
Material is highly toxic to aquatic organisms on an acute basis (LC50/EC50 between 0.1 and 1 mg/L in the most sensitive species tested).
LC50, Oncorhynchus mykiss (rainbow trout), 96 Hour, > 0.1 mg/l

Isobutane

Acute toxicity to fish
No relevant data found.

Propane

Acute toxicity to fish
No relevant data found.

Methyl ether

Acute toxicity to fish
Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).
LC50, Poecilia reticulata (guppy), semi-static test, 96 Hour, > 4,000 mg/l

Acute toxicity to aquatic invertebrates
LC50, Daphnia magna (Water flea), 48 Hour, > 4,000 mg/l, OECD Test Guideline 202 or Equivalent

4,4' -Methylenediphenyl diisocyanate

Acute toxicity to fish
The measured ecotoxicity is that of the hydrolyzed product, generally under conditions maximizing production of soluble species.

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).
Based on information for a similar material:
LC50, Danio rerio (zebra fish), static test, 96 Hour, > 1,000 mg/l, OECD Test Guideline 203 or Equivalent

Acute toxicity to aquatic invertebrates
Based on information for a similar material:
EC50, Daphnia magna (Water flea), static test, 24 Hour, > 1,000 mg/l, OECD Test Guideline 202 or Equivalent

Acute toxicity to algae/aquatic plants
Based on information for a similar material:
NOEC, Desmodesmus subspicatus (green algae), static test, 72 Hour, Growth rate inhibition, 1,640 mg/l, OECD Test Guideline 201 or Equivalent

Toxicity to bacteria
Based on information for a similar material:
EC50, activated sludge, static test, 3 Hour, Respiration rates., > 100 mg/l

Toxicity to soil-dwelling organisms
EC50, Eisenia fetida (earthworms), Based on information for a similar material:, 14 d, > 1,000 mg/kg

Toxicity to terrestrial plants
EC50, Avena sativa (oats), Growth inhibition, 1,000 mg/l
EC50, Lactuca sativa (lettuce), Growth inhibition, 1,000 mg/l

N,N'-Dimorpholinodiethylether

Acute toxicity to fish
Material is practically non-toxic to fish on an acute basis (LC50 > 100 mg/L).
May increase pH of aquatic systems to > pH 10 which may be toxic to aquatic organisms.
LC50, Danio rerio (zebra fish), static test, 96 Hour, > 2,150 mg/l, OECD Test Guideline 203 or Equivalent

Acute toxicity to aquatic invertebrates
EC50, Daphnia (water flea), static test, 48 Hour, > 100 mg/l, OECD Test Guideline 202 or Equivalent

Acute toxicity to algae/aquatic plants
ErC50, Algae, static test, 72 Hour, > 100 mg/l, OECD Test Guideline 201 or Equivalent

Toxicity to bacteria
EC50, Bacteria, static test, 3 Hour, 100 mg/l, activated sludge test (OECD 209)

Persistence and degradability

Polymethylenepolyphenylisocyanate, propoxylated glycerin polymer

Biodegradability: For this family of materials: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.

Polymethylenepolyphenyl polyisocyanate, polypropyleneglycol copolymer

Biodegradability: Expected to degrade slowly in the environment.

Diphenylmethane Diisocyanate, isomers and homologues

Biodegradability: In the aquatic and terrestrial environment, material reacts with water forming predominantly insoluble polyureas which appear to be stable. In the atmospheric environment, material is expected to have a short tropospheric half-life, based on calculations and by analogy with related diisocyanates.
10-day Window: Not applicable
Biodegradation: 0 %
Exposure time: 28 d
Method: OECD Test Guideline 302C or Equivalent

Paraffin waxes and Hydrocarbon waxes, chlorinated

Biodegradability: Expected to degrade slowly in the environment.

Theoretical Oxygen Demand: 2.89 mg/mg

Isobutane

Biodegradability: Biodegradation may occur under aerobic conditions (in the presence of oxygen).

Theoretical Oxygen Demand: 3.58 mg/mg

Photodegradation
Test Type: Half-life (indirect photolysis)
Sensitizer: OH radicals
Atmospheric half-life: 4.4 d
Method: Estimated.

Propane

Biodegradability: No relevant data found.

Theoretical Oxygen Demand: 3.64 mg/mg

Photodegradation
Test Type: Half-life (indirect photolysis)
Sensitizer: OH radicals
Atmospheric half-life: 8.4 d
Method: Estimated.

Methyl ether

Biodegradability: Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.
10-day Window: Fail
Biodegradation: 5 %
Exposure time: 28 d
Method: OECD Test Guideline 301A or Equivalent

Theoretical Oxygen Demand: 2.08 mg/mg

Photodegradation
Test Type: Half-life (indirect photolysis)
Sensitizer: OH radicals

Atmospheric half-life: 6.4 d
Method: Estimated.

4,4' -Methylenediphenyl diisocyanate

Biodegradability: In the aquatic and terrestrial environment, material reacts with water forming predominantly insoluble polyureas which appear to be stable. In the atmospheric environment, material is expected to have a short tropospheric half-life, based on calculations and by analogy with related diisocyanates.
10-day Window: Not applicable
Biodegradation: 0 %
Exposure time: 28 d
Method: OECD Test Guideline 302C or Equivalent

N,N'-Dimorpholinodiethylether

Biodegradability: Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.
10-day Window: Fail
Biodegradation: 0 - 10 %
Exposure time: 28 d
Method: OECD Test Guideline 301A or Equivalent

Theoretical Oxygen Demand: 2.49 mg/mg

Photodegradation
Test Type: Half-life (indirect photolysis)
Sensitizer: OH radicals
Atmospheric half-life: 0.03 d
Method: Estimated.

Bioaccumulative potential

Polymethylenepolyphenylisocyanate, propoxylated glycerin polymer

Bioaccumulation: No relevant data found.

Polymethylenepolyphenyl polyisocyanate, polypropyleneglycol copolymer

Bioaccumulation: In the aquatic and terrestrial environment, movement is expected to be limited by its reaction with water forming predominantly insoluble polyureas.

Diphenylmethane Diisocyanate, isomers and homologues

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3). Reacts with water. In the aquatic and terrestrial environment, movement is expected to be limited by its reaction with water forming predominantly insoluble polyureas.
Bioconcentration factor (BCF): 92 Cyprinus carpio (Carp) 28 d

Paraffin waxes and Hydrocarbon waxes, chlorinated

Bioaccumulation: Bioconcentration potential is low (BCF less than 100 or log Pow greater than 7).
Partition coefficient: n-octanol/water(log Pow): 7.4 Estimated.

Isobutane

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partition coefficient: n-octanol/water(log Pow): 2.76 Measured

Propane

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partition coefficient: n-octanol/water(log Pow): 2.36 Measured

Methyl ether

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partition coefficient: n-octanol/water(log Pow): 0.10 Measured

4,4' -Methylenediphenyl diisocyanate

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3). Reacts with water. In the aquatic and terrestrial environment, movement is expected to be limited by its reaction with water forming predominantly insoluble polyureas.
Bioconcentration factor (BCF): 92 Cyprinus carpio (Carp) 28 d

N,N'-Dimorpholinodiethylether

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partition coefficient: n-octanol/water(log Pow): 0.5 Estimated.

Mobility in soil

Polymethylenepolyphenylisocyanate, propoxylated glycerin polymer

No relevant data found.

Polymethylenepolyphenyl polyisocyanate, polypropyleneglycol copolymer

In the aquatic and terrestrial environment, movement is expected to be limited by its reaction with water forming predominantly insoluble polyureas.

Diphenylmethane Diisocyanate, isomers and homologues

In the aquatic and terrestrial environment, movement is expected to be limited by its reaction with water forming predominantly insoluble polyureas.

Paraffin waxes and Hydrocarbon waxes, chlorinated

Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process.
Expected to be relatively immobile in soil (Koc > 5000).
Partition coefficient(Koc): > 5000 Estimated.

Isobutane

Potential for mobility in soil is very high (Koc between 0 and 50).
Partition coefficient(Koc): 35 Estimated.

Propane

Potential for mobility in soil is very high (Koc between 0 and 50).
Partition coefficient(Koc): 24 - 460 Estimated.

Methyl ether

Potential for mobility in soil is very high (Koc between 0 and 50).
Partition coefficient(Koc): 1.29 - 14 Estimated.

4,4' -Methylenediphenyl diisocyanate

In the aquatic and terrestrial environment, movement is expected to be limited by its reaction with water forming predominantly insoluble polyureas.

N,N'-Dimorpholinodiethylether

Potential for mobility in soil is low (Koc between 500 and 2000).
Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process.
Partition coefficient(Koc): 784 Estimated.

13. DISPOSAL CONSIDERATIONS

Disposal methods: DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. AS YOUR SUPPLIER, WE HAVE NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION: Composition Information. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Incinerator or other thermal destruction device.

14. TRANSPORT INFORMATION

DOT

Proper shipping name	Aerosols
UN number	UN 1950
Class	2.1
Packing group	

Classification for SEA transport (IMO-IMDG):

Proper shipping name	AEROSOLS
UN number	UN 1950
Class	2.1
Packing group	
Marine pollutant	Paraffin waxes and Hydrocarbon waxes, chlorinated
Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code	Consult IMO regulations before transporting ocean bulk

Classification for AIR transport (IATA/ICAO):

Proper shipping name	Aerosols, flammable
UN number	UN 1950
Class	2.1
Packing group	

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container

volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. REGULATORY INFORMATION

OSHA Hazard Communication Standard
This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312
Acute Health Hazard
Chronic Health Hazard
Fire Hazard

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313
This product contains the following substances which are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and which are listed in 40 CFR 372.

Components	**CASRN**
Diphenylmethane Diisocyanate, isomers and homologues	9016-87-9
4,4' -Methylenediphenyl diisocyanate	101-68-8

Pennsylvania Worker and Community Right-To-Know Act:
The following chemicals are listed because of the additional requirements of Pennsylvania law:

Components	**CASRN**
Isobutane	75-28-5
Propane	74-98-6
Methyl ether	115-10-6

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)
This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

United States TSCA Inventory (TSCA)
All components of this product are in compliance with the inventory listing requirements of the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

16. OTHER INFORMATION

Revision

Identification Number: 101216112 / A001 / Issue Date: 01/04/2016 / Version: 4.0
Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend

ACGIH	USA. ACGIH Threshold Limit Values (TLV)
Asphyxiant	Asphyxiant
C	Ceiling
NIOSH REL	USA. NIOSH Recommended Exposure Limits
OSHA Z-1	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
STEL	Short-term exposure limit
TWA	8-hour, time-weighted average
US WEEL	USA. Workplace Environmental Exposure Levels (WEEL)

Information Source and References
This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

THE DOW CHEMICAL COMPANY urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.

Safety Data Sheet

Section 1: Identification

Product identifier

Product Name • **HEET® Gas Line Antifreeze Line**

Synonyms • 584402

Product Code • 28201; 28203; 28205; 28213; 28219

Relevant identified uses of the substance or mixture and uses advised against

Recommended use • Gasoline fuel additive

Restrictions on use • Do not use in diesel fuel or add to gasoline/oil mixtures use in 2 cycle engines

Details of the supplier of the safety data sheet

Manufacturer • Gold Eagle Co.

4400 S. Kildare Avenue
Chicago, IL 60632-4372
United States
http://www.goldeagle.com/

Telephone (General) • 773-376-4400

Emergency telephone number

Manufacturer • 1-800-535-5053 - (INFOTRAC #22283)

Section 2: Hazard Identification

United States (US)

According to: OSHA 29 CFR 1910.1200 HCS

Classification of the substance or mixture

OSHA HCS 2012 •

Flammable Liquids 2
Skin Irritation 2
Eye Irritation 2
Specific Target Organ Toxicity Single Exposure 3: Narcotic Effects
Reproductive Toxicity 2
Specific Target Organ Toxicity Single Exposure 1
Specific Target Organ Toxicity Repeated Exposure 1

Label elements

OSHA HCS 2012

DANGER



Hazard statements •

Highly flammable liquid and vapour
Causes skin irritation
Causes serious eye irritation

May cause drowsiness or dizziness
Suspected of damaging fertility or the unborn child.
Causes damage to organs - Eyes
Causes damage to organs - Eyes through prolonged or repeated exposure

Precautionary statements

Prevention

- Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Keep away from heat, sparks, open flames and/or hot surfaces. - No smoking.
Keep container tightly closed.
Ground and/or bond container and receiving equipment.
Use explosion-proof electrical/ventilating/lighting/equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Do not breathe mist/vapours/spray.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
Wear protective gloves and eye/face protection , .

Response

- In case of fire: Use appropriate media for extinction.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
Call a POISON CENTER or doctor/physician if you feel unwell.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
Wash contaminated clothing before reuse.
If skin irritation occurs: Get medical advice/attention.
Specific treatment, see supplemental first aid information.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.
Get medical advice/attention if you feel unwell.
IF exposed: Call POISON CENTER or doctor/physician.

Storage/Disposal

- Store in a well-ventilated place. Keep container tightly closed.
Keep cool.
Store locked up.
Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Other hazards

OSHA HCS 2012

- Under United States Regulations (29 CFR 1910.1200 - Hazard Communication Standard), this product is considered hazardous.

Section 3 - Composition/Information on Ingredients

Substances

- Material does not meet the criteria of a substance.

Mixtures

Composition				
Chemical Name	**Identifiers**	**%**	**LD50/LC50**	**Classifications According to Regulation/Directive**
			Inhalation-Rat LC50 •	

Methanol	**CAS:**67-56-1	100%	64000 ppm 4 Hour(s) Skin-Rabbit LD50 • 15800 mg/kg Ingestion/Oral-Rat LD50 • 5600 mg/kg	**OSHA HCS 2012:** Flam. Liq. 2; Eye Irrit. 2; Skin Irrit. 2; STOT SE 1 (Eyes); STOT SE 3: Narc.; STOT RE 1 (Eyes); Repr. 2
Proprietary	*Proprietary*	0.0006% TO 0.0012%	Ingestion/Oral-Rat LD50 • 4300 mg/kg Inhalation-Rat LC50 • 5000 ppm 4 Hour(s) Skin-Rabbit LD50 • >1700 mg/kg	**OSHA HCS 2012:** Exposure limit(s)
Proprietary	*Proprietary*	0.0001996% TO 0.0003996%	Skin-Rabbit LD50 • 17800 µL/kg Ingestion/Oral-Rat LD50 • 3500 mg/kg Inhalation-Rat LC50 • 55000 mg/m³ 2 Hour(s)	**OSHA HCS 2012:** Exposure limit(s)

Section 4: First-Aid Measures

Description of first aid measures

Inhalation
- Move victim to fresh air. Administer oxygen if breathing is difficult. Give artificial respiration if victim is not breathing.

Skin
- In case of burns, immediately cool affected skin for as long as possible with cold water. Do not remove clothing if adhering to skin. In case of contact with substance, immediately flush skin with running water for at least 20 minutes. Remove and isolate contaminated clothing. Wash skin with soap and water.

Eye
- Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first five minutes, then continue rinsing eye. Get medical attention immediately.

Ingestion
- Induce vomiting (only in conscious persons) Then give 2 teaspoons of baking soda in a glass of water. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Most important symptoms and effects, both acute and delayed

- Refer to Section 11 - Toxicological Information.

Indication of any immediate medical attention and special treatment needed

Notes to Physician
- All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

Section 5: Fire-Fighting Measures

Extinguishing media

Suitable Extinguishing Media
- Use halon replacement or carbon dioxide extinguishers or alcohol foam for small fires. Large fires should be extinguished with alcohol foam.

Unsuitable Extinguishing Media
- Water spray or fog can cool fire but may not be effective in extinguishing fire.

Special hazards arising from the substance or mixture

Unusual Fire and Explosion Hazards
- Containers may explode when heated.
  Vapor explosion hazard indoors, outdoors or in sewers.
  HIGHLY FLAMMABLE: Will be easily ignited by heat, sparks or flames.
  Many liquids are lighter than water.
  Most vapors are heavier than air. They will spread along ground and collect in low or

confined areas (sewers, basements, tanks).
Runoff to sewer may create fire or explosion hazard.
Vapors may form explosive mixtures with air.
Vapors may travel to source of ignition and flash back.

Hazardous Combustion Products

- No data available

Advice for firefighters

- Structural firefighters' protective clothing will only provide limited protection.
Wear positive pressure self-contained breathing apparatus (SCBA).
Move containers from fire area if you can do it without risk.
LARGE FIRES: Cool containers with flooding quantities of water until well after fire is out.

Section 6 - Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

Personal Precautions

- Ventilate the area. Do not walk through spilled material. Use appropriate Personal Protective Equipment (PPE) Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Do not breathe mist, vapours and/or spray. Avoid contact with skin, eyes, and clothing.

Emergency Procedures

- As an immediate precautionary measure, isolate spill or leak area for at least 50 meters (150 feet) in all directions. If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions. LARGE SPILL: Consider initial downwind evacuation for at least 300 meters (1000 feet) ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Keep unauthorized personnel away. Stay upwind. Keep out of low areas. Ventilate closed spaces before entering.

Environmental precautions

- Prevent entry into waterways, sewers, basements or confined areas.

Methods and material for containment and cleaning up

Containment/Clean-up Measures

- Stop leak if you can do it without risk.
Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.
Use clean non-sparking tools to collect absorbed material.
A vapor suppressing foam may be used to reduce vapors.
All equipment used when handling the product must be grounded.
LARGE SPILLS: Dike far ahead of liquid spill for later disposal.
LARGE SPILLS: Water spray may reduce vapor; but may not prevent ignition in closed spaces.

Section 7 - Handling and Storage

Precautions for safe handling

Handling

- Use only with adequate ventilation. Keep away from heat, sparks, and flame. All equipment used when handling the product must be grounded. Take precautionary measures against static charges. Do not use sparking tools. Contact lenses should not be worn when working with this chemical. Wear appropriate personal protective equipment, avoid direct contact. Do not breathe mist, vapours and/or spray. Avoid contact with skin, eyes, and clothing. Wash thoroughly with soap and water after handling and before eating, drinking, or using tobacco.

Conditions for safe storage, including any incompatibilities

Storage

- Keep container tightly closed. Keep away from sources of ignition – No Smoking. Store in a cool, dry, well-ventilated place. Empty containers contain product residues, assume emptied containers to have same hazards as full containers.

Section 8 - Exposure Controls/Personal Protection

Control parameters

Exposure Limits/Guidelines				
	Result	ACGIH	NIOSH	OSHA
Proprietary (Proprietary)	TWAs	20 ppm TWA	100 ppm TWA; 435 mg/m3 TWA	100 ppm TWA; 435 mg/m3 TWA
	STELs	Not established	125 ppm STEL; 545 mg/m3 STEL	Not established
Proprietary (Proprietary)	TWAs	100 ppm TWA	Not established	100 ppm TWA; 435 mg/m3 TWA
	STELs	150 ppm STEL	Not established	Not established
Methanol (67-56-1)	TWAs	200 ppm TWA	200 ppm TWA; 260 mg/m3 TWA	200 ppm TWA; 260 mg/m3 TWA
	STELs	250 ppm STEL	250 ppm STEL; 325 mg/m3 STEL	Not established

Exposure controls

Engineering Measures/Controls

- Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Use only appropriately classified electrical equipment.

Personal Protective Equipment

Respiratory

- In case of insufficient ventilation, wear suitable respiratory equipment. Follow the OSHA respirator regulations found in 29 CFR 1910.134. Use a NIOSH/MSHA approved respirator if exposure limits are exceeded or symptoms are experienced.

Eye/Face

- Wear chemical splash safety goggles.

Skin/Body

- Wear appropriate gloves. Wear protective clothing

Environmental Exposure Controls

- Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways. Follow best practice for site management and disposal of waste.

Key to abbreviations

ACGIH = American Conference of Governmental Industrial Hygiene
NIOSH = National Institute of Occupational Safety and Health
OSHA = Occupational Safety and Health Administration
STEL = Short Term Exposure Limits are based on 15-minute exposures
TWA = Time-Weighted Averages are based on 8h/day, 40h/week exposures

Section 9 - Physical and Chemical Properties

Information on Physical and Chemical Properties

Material Description			
Physical Form	Liquid	Appearance/Description	Water-white to pale yellow liquid.
Color	Water-white to pale yellow.	Odor	No data available
Odor Threshold	No data available		
General Properties			
Boiling Point	147 F(63.8889 C)	Melting Point/Freezing Point	No data available
Decomposition Temperature	No data available	pH	No data available
Specific Gravity/Relative Density	= 0.791 Water=1	Water Solubility	Soluble 100 %
Viscosity	3 to 5 Centistoke (cSt, cS) or mm2/sec @ 40 C(104 F)		
Volatility			
Vapor Pressure	96 mmHg (torr)	Vapor Density	No data available
Evaporation Rate	No data available	VOC (Vol.)	100 %
Volatiles (Vol.)	100 %		
Flammability			

Flash Point	56 F(13.3333 C)	UEL	12.7 %
LEL	2 %	Autoignition	No data available
Flammability (solid, gas)	Not relevant.		
Environmental			
Octanol/Water Partition coefficient	No data available		

Section 10: Stability and Reactivity

Reactivity

- No dangerous reaction known under conditions of normal use.

Chemical stability

- Stable under normal temperatures and pressures.

Possibility of hazardous reactions

- Hazardous polymerization will not occur.

Conditions to avoid

- Keep away from heat, sparks, and flame.

Incompatible materials

- Strong oxidizing agents, aluminum, zinc, or metals that displace hydrogen, rubber and rubber based coatings, chromic anhydride, lead perchlorate and perchloric acids.

Hazardous decomposition products

- Excessive heating and/or incomplete combustion will produce carbon monoxide.

Section 11 - Toxicological Information

Information on toxicological effects

Components		
Methanol (100%)	67-56-1	**Acute Toxicity:** Ingestion/Oral-Rat LD50 • 5600 mg/kg; Inhalation-Rat LC50 • 64000 ppm 4 Hour(s); Skin-Rabbit LD50 • 15800 mg/kg; **Irritation:** Eye-Rabbit • 100 mg 24 Hour(s) • Moderate irritation; Skin-Rabbit • 20 mg 24 Hour(s) • Moderate irritation; **Mutagen:** Cytogenetic analysis • Ingestion/Oral-Mouse • 1 g/kg; DNA damage • Ingestion/Oral-Rat • 10 µmol/kg; **Reproductive:** Inhalation-Mouse TCLo • 5000 ppm 7 Hour(s)(6-15D preg); *Reproductive Effects:Specific Developmental Abnormalities*:**Central nervous system**; *Reproductive Effects:Specific Developmental Abnormalities*:**Craniofacial (including nose and tongue)**; Inhalation-Mouse TCLo • 2000 ppm 7 Hour(s)(6-15D preg); *Reproductive Effects:Specific Developmental Abnormalities*:**Musculoskeletal system**

GHS Properties	Classification
Respiratory sensitization	**OSHA HCS 2012** • Data lacking
Serious eye damage/Irritation	**OSHA HCS 2012** • Eye Irritation 2
Acute toxicity	**OSHA HCS 2012** • Data lacking
Aspiration Hazard	**OSHA HCS 2012** • Data lacking
Carcinogenicity	**OSHA HCS 2012** • Data lacking
Skin corrosion/Irritation	**OSHA HCS 2012** • Skin Irritation 2
Skin sensitization	**OSHA HCS 2012** • Data lacking
STOT-RE	**OSHA HCS 2012** • Specific Target Organ Toxicity Repeated Exposure 1

STOT-SE	**OSHA HCS 2012** • Specific Target Organ Toxicity Single Exposure 1; Specific Target Organ Toxicity Single Exposure 3: Narcotic Effects
Toxicity for Reproduction	**OSHA HCS 2012** • Toxic to Reproduction 2
Germ Cell Mutagenicity	**OSHA HCS 2012** • Data lacking

Potential Health Effects

Inhalation

Acute (Immediate)
- May affect the central nervous system. Symptoms may include dizziness, drowsiness, lethargy, coma and death.

Chronic (Delayed)
- No data available.

Skin

Acute (Immediate)
- Causes skin irritation.

Chronic (Delayed)
- No data available.

Eye

Acute (Immediate)
- Causes serious eye irritation.

Chronic (Delayed)
- No data available.

Ingestion

Acute (Immediate)
- May cause headache, dizziness, weakness, euphoria, drowsiness, shortness of breath, vomiting, and loss of voluntary muscle control. Can also cause blindness and death.

Chronic (Delayed)
- No data available.

Other

Chronic (Delayed)
- Chronic poisoning from repeated exposure to methanol vapor were manifested by conjunctivitis, headache, giddiness, insomnia, gastric disturbances, and bilateral blindness.

Carcinogenic Effects
- This product does not contain any components above de minimus concentrations that are considered carcinogenic by OSHA , IARC or NTP .

Carcinogenic Effects		
	CAS	**IARC**
Proprietary	Proprietary	Group 2B-Possible Carcinogen

Reproductive Effects
- Animal tests for components have shown adverse reproductive effects.

Key to abbreviations
LD = Lethal Dose
TC = Toxic Concentration

Section 12 - Ecological Information

Toxicity

- Non-mandatory section - information about this substance not complied for this reason.

Persistence and degradability

- Non-mandatory section - information about this substance not complied for this reason.

Bioaccumulative potential

- Non-mandatory section - information about this substance not complied for this reason.

Mobility in Soil

- Non-mandatory section - information about this substance not complied for this reason.

Other adverse effects

- Non-mandatory section - information about this substance not complied for this reason.

Section 13 - Disposal Considerations

Waste treatment methods

Product waste
- Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Packaging waste
- Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Section 14 - Transport Information

	UN number	UN proper shipping name	Transport hazard class(es)	Packing group	Environmental hazards
DOT	ORM-D	Consumer commodity	NDA	NDA	NDA

Special precautions for user
- None specified.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
- No data available

Section 15 - Regulatory Information

Safety, health and environmental regulations/legislation specific for the substance or mixture

SARA Hazard Classifications
- Acute, Chronic, Fire

Inventory		
Component	**CAS**	**TSCA**
Proprietary	*Proprietary*	Yes
Methanol	67-56-1	Yes
Proprietary	*Proprietary*	Yes

United States

Labor

U.S. - OSHA - Process Safety Management - Highly Hazardous Chemicals

• *Proprietary*	*Proprietary*	Not Listed
• Methanol	67-56-1	Not Listed
• *Proprietary*	*Proprietary*	Not Listed

U.S. - OSHA - Specifically Regulated Chemicals

• *Proprietary*	*Proprietary*	Not Listed
• Methanol	67-56-1	Not Listed
• *Proprietary*	*Proprietary*	Not Listed

Environment

U.S. - CAA (Clean Air Act) - 1990 Hazardous Air Pollutants

• *Proprietary*	*Proprietary*	(listed under Ethyl benzene)
• Methanol	67-56-1	
• *Proprietary*	*Proprietary*	(isomers and mixtures)

U.S. - CAA (Clean Air Act) - Accidental Release Prevention - Flammable Substances

• *Proprietary*	*Proprietary*	Not Listed
• Methanol	67-56-1	Not Listed
• *Proprietary*	*Proprietary*	Not Listed

U.S. - CAA (Clean Air Act) - Accidental Release Prevention - Toxic Substances

• *Proprietary*	*Proprietary*	Not Listed
• Methanol	67-56-1	Not Listed
• *Proprietary*	*Proprietary*	Not Listed

U.S. - CERCLA/SARA - Hazardous Substances and their Reportable Quantities

• *Proprietary*	*Proprietary*	1000 lb final RQ; 454 kg final RQ
• Methanol	67-56-1	5000 lb final RQ; 2270 kg final RQ
• *Proprietary*	*Proprietary*	100 lb final RQ; 45.4 kg final RQ

U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances EPCRA RQs

• *Proprietary*	*Proprietary*	Not Listed
• Methanol	67-56-1	Not Listed
• *Proprietary*	*Proprietary*	Not Listed

U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances TPQs

• *Proprietary*	*Proprietary*	Not Listed
• Methanol	67-56-1	Not Listed
• *Proprietary*	*Proprietary*	Not Listed

U.S. - CERCLA/SARA - Section 313 - Emission Reporting

• *Proprietary*	*Proprietary*	0.1 % de minimis concentration
• Methanol	67-56-1	1.0 % de minimis concentration
• *Proprietary*	*Proprietary*	1.0 % de minimis concentration

U.S. - CERCLA/SARA - Section 313 - PBT Chemical Listing

• *Proprietary*	*Proprietary*	Not Listed
• Methanol	67-56-1	Not Listed
• *Proprietary*	*Proprietary*	Not Listed

U.S. - CWA (Clean Water Act) - Hazardous Substances

• *Proprietary*	*Proprietary*	
• Methanol	67-56-1	Not Listed
• *Proprietary*	*Proprietary*	

U.S. - CWA (Clean Water Act) - Toxic Pollutants

• *Proprietary*	*Proprietary*	
• Methanol	67-56-1	Not Listed
• *Proprietary*	*Proprietary*	Not Listed

United States - California

Environment

U.S. - California - Proposition 65 - Carcinogens List

• *Proprietary*	*Proprietary*	carcinogen, initial date 6/11/04
• Methanol	67-56-1	Not Listed
• *Proprietary*	*Proprietary*	Not Listed

U.S. - California - Proposition 65 - Developmental Toxicity

• *Proprietary*	*Proprietary*	Not Listed
• Methanol	67-56-1	developmental toxicity, initial date 3/16/12
• *Proprietary*	*Proprietary*	Not Listed

U.S. - California - Proposition 65 - Maximum Allowable Dose Levels (MADL)

• *Proprietary*	*Proprietary*	Not Listed
• Methanol	67-56-1	Not Listed
• *Proprietary*	*Proprietary*	Not Listed

U.S. - California - Proposition 65 - No Significant Risk Levels (NSRL)

• *Proprietary*	*Proprietary*	54 µg/day NSRL (inhalation); 41 µg/day NSRL (oral)
• Methanol	67-56-1	Not Listed
• *Proprietary*	*Proprietary*	Not Listed

U.S. - California - Proposition 65 - Reproductive Toxicity - Female

• *Proprietary*	*Proprietary*	Not Listed
• Methanol	67-56-1	Not Listed
• *Proprietary*	*Proprietary*	Not Listed

U.S. - California - Proposition 65 - Reproductive Toxicity - Male

• *Proprietary*	*Proprietary*	Not Listed
• Methanol	67-56-1	Not Listed
• *Proprietary*	*Proprietary*	Not Listed

Other Information

- WARNING: This product contains a chemical known to the State of California to cause cancer, birth defects, or other reproductive harm.

Section 16 - Other Information

Revision Date
- 11/September/2015

Preparation Date
- 23/September/2014

Other Information
- Schedule B Number: 3820.00.0000.

Disclaimer/Statement of Liability
- Information presented herein is believed to be factual, as it has been derived from the works and opinions of persons believed to be qualified experts. However, nothing contained in this information is to be taken as warranty or representation for which the Gold Eagle Co. bears legal responsibility. The user should review any recommendations in the specific context of the intended use to determine whether they are appropriate.

Key to abbreviations

NDA = No data available

MATERIAL SAFETY DATA SHEET

Product name: **HIT-HY 70**

Description: Methacrylate adhesive mortar for anchor and rebar fastenings.

Supplier: Hilti, Inc. P.O. Box 21148, Tulsa, OK 74121

Emergency # (Chem-Trec.): 1 800 424 9300 (USA, PR, Virgin Islands, Canada); 001 703 527 3887 (other countries)

INGREDIENTS AND EXPOSURE LIMITS

Ingredients:		CAS Number:	TLV:	PEL:	STEL:
Part A:	Urethane Methacrylate Resin	NJ TSRN: 191361-5028	NE	NE	NE
	Acrylic acid ester	27813-02-1	NE	NE	NE
	Ester of methacrylic acid	43048-08-4	NE	NE	NE
	Methacrylic acid ester	3290-92-4	NE	NE	NE
	Boric acid	10043-35-3	2 mg/m^3 (I)	NE	6 mg/m^3 (I)
	Quartz sand	14808-60-7	0.025 mg/m^3 (R)	10 mg/m^3 (R) % SiO_2 + 2	NE
Part B:	Quartz sand	14808-60-7	0.025 mg/m^3 (R)	10 mg/m^3 (R) % SiO_2 + 2	NE
	Dibenzoyl peroxide	000094-36-0	5 mg/m^3	5 mg/m^3	NE
	Amorphous silica	007631-86-9	NE	NE	NE

Abbreviations: **NJ TSRN** indicates New Jersey Trade Secret Registry Number. **PEL** = OSHA Permissible Exposure Limit. **TLV** = ACGIH Threshold Limit Value. **STEL** = Short Term Exposure Limit. **R** = Respirable Fraction. **I** = Inhalable fraction of aerosol. **NE** = None Established. **NA** = Not Applicable.

PHYSICAL DATA

Appearance and Odor:	Light gray paste. Ester-like odor.	**VOC Content**	24.0 g/l
Boiling Point:	Not determined.	**Vapor Pressure:**	Not determined.
Vapor Density:	Not applicable.	**Odor Threshold:**	Not determined.
Evaporation Rate:	Not determined.	**Solubility in Water:**	Insoluble.
Specific Gravity:	1.7	**pH:**	6 (Part B)

FIRE AND EXPLOSION HAZARD DATA

Flash Point:	> 212° F	**Flammable Limits:**	Not applicable.
Extinguishing Media:	Carbon Dioxide, Dry Chemical, Foam, Water.		
Special Fire Fighting Procedures:	Use a self-contained breathing apparatus when fighting fires involving chemicals.		
Unusual Fire and Explosion Hazards:	None known. Thermal decomposition products can be formed.		

REACTIVITY DATA

Stability:	Dibenzoyl peroxide decomposes (non-violently) at 150° F. Ignition does not occur due to the water content.
Hazardous Polymerization:	Will not occur
Incompatibility:	No incompatible materials known. Do not store in direct sunlight.
Hazardous Decomposition Products:	Thermal decomposition can yield CO , NO_x, and CO_2.
Conditions to Avoid:	Temperature extremes will shorten product shelf life.

HEALTH HAZARD DATA

Known Hazards:	Can cause irritation. Possible sensitization.
Signs and Symptoms of Exposure:	**Eyes:** Can cause irritation. **Skin:** Can cause irritation. Repeated contact may cause sensitization. ching, reddening) can occur with some individuals; e.g. itching, redness, swelling, etc. **Inhalation:** No ill effects expected. Irritation is possible. **Ingestion:** Not a likely route of exposure.

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Routes of Exposure:	Dermal.
Carcinogenicity:	IARC classifies crystalline silica (quartz sand) as a Gp I carcinogen based upon evidence among workers in industries where there has been long-term and chronic exposure (via inhalation) to silica dust; e.g. mining, quarry, stone crushing, refractory brick and pottery workers. This product does not pose a dust hazard; therefore, this classification is not relevant.
Medical Conditions Aggravated by Exposure:	Eye, skin, and respiratory conditions.

EMERGENCY AND FIRST AID PROCEDURES

Eyes:	Flush with plenty of water. Contact a physician if symptoms occur.
Skin:	Wash with soap and water. Launder contaminated clothing before reuse.
Inhalation:	Move victim to fresh air. Call a physician if symptoms persist.
Ingestion:	Do not induce vomiting unless directed by a physician. Contact a physician immediately.
Other:	Referral to a physician is recommended if there is any question about the seriousness of the injury/exposure. If sensitization occurs, future contact with the material should be avoided.

CONTROL MEASURES AND PERSONAL PROTECTIVE EQUIPMENT

Ventilation:	General (natural or mechanically induced fresh air movements).
Eye Protection:	Safety glasses with side shields recommended.
Skin Protection:	Impermeable (neoprene or rubber) gloves recommended.
Respiratory Protection:	None normally required. Where ventilation is inadequate to control vapors, use a NIOSH-approved respirator with organic vapor cartridges.

PRECAUTIONS FOR SAFE HANDLING AND USE

Handling and Storing Precautions:	Store in a cool, dry area preferably between 40° and 77° F. Do not store in direct sunlight. Avoid prolonged or repeated contact. Use with adequate ventilation. Always wash thoroughly after handling chemical products. For industrial use only. Keep out of reach of children.
Spill Procedures:	Cover with an absorbent material and place in a salvage container for proper disposal. If possible, mix parts A and B and allow product to cure (harden).

REGULATORY INFORMATION

Hazard Communication:	This MSDS has been prepared in accordance with the federal OSHA Hazard Communication Standard 29 CFR 1910.1200.
HMIS Codes:	Health 1, Flammability 1, Reactivity 1, PPE B
DOT Shipping Name:	Not regulated.
IATA / ICAO Shipping Name:	Not regulated.
TSCA Inventory Status:	All chemical components listed on TSCA inventory.
SARA Title III, Section 313:	This product contains 5 - 10% Benzoyl peroxide (CAS # 94-36-0), which is subject to reporting under Section 313 of SARA Title III (40 CFR Part 372).
EPA Waste Code(s):	Not regulated by EPA as a hazardous waste
Waste Disposal Methods:	Consult with regulatory agencies or your corporate personnel for disposal methods that comply with local, state, and federal safety, health and environmental regulations.

CONTACTS

Customer Service:	1 800 879 8000	**Technical Service:**	1 800 879 8000
Health / Safety:	1 800 879 6000 Jerry Metcalf (x1003704)		
Emergency # (Chem-Trec):	1 800 424 9300 (USA, PR, Virgin Islands, Canada); 001 703 527 3887 (other countries)		

The information and recommendations contained herein are based upon data believed to be correct; however, no guarantee or warranty of any kind expressed or implied is made with respect to the information provided.

Safety Data Sheet
acc. to ISO 11014

Printing date 05/18/2015 Version number 2 Reviewed on 05/18/2015

1 Identification

· **Product identifier**

· **Trade name: Hilti HIT-HY 100**
· **Container size:** 330 ml, 500 ml
· **Relevant identified uses of the substance or mixture and uses advised against**
· **Sector of Use** Building and construction work
· **Application of the substance / the mixture** Adhesive mortar for anchor fastenings in concrete

· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
Hilti, Inc.
5400 South 122nd East Ave.
US-Tulsa, OK 74146
Phone: (800) 879-8000
Fax: (800) 879-7000
Español: (800) 879-5000

· **Information department:**
anchor.hse@hilti.com
see section 16
· **Emergency telephone number:**
Chem-Trec
Tel.: 1 800 424 9300 (USA, PR, Virgin Islands, Canada)
Tel.: 703 527 3887 (Other countries)

*
2 Hazard(s) identification

· **Classification of the substance or mixture**

Repr. 1B	H360	May damage fertility or the unborn child.
Aquatic Acute 1	H400	Very toxic to aquatic life.
Eye Irrit. 2A	H319	Causes serious eye irritation.
Skin Sens. 1	H317	May cause an allergic skin reaction.

· **Label elements**
· **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
· **Hazard pictograms**



GHS07 GHS08 GHS09

· **Signal word** Danger

· **Hazard-determining components of labeling:**
Hydroxypropyl methacrylate
Boric acid
dibenzoyl peroxide
· **Hazard statements**
H319 Causes serious eye irritation.
H317 May cause an allergic skin reaction.
H360 May damage fertility or the unborn child.
H400 Very toxic to aquatic life.
· **Precautionary statements**

P280	Wear protective gloves/protective clothing/eye protection/face protection.
P262	Do not get in eyes, on skin, or on clothing.
P305+P351+P338	If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P337+P313	If eye irritation persists: Get medical advice/attention.
P302+P352	If on skin: Wash with plenty of soap and water.

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Trade name: Hilti HIT-HY 100

(Contd. of page 1)

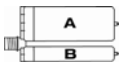
· **Classification system**
· **NFPA ratings (scale 0-4)**



Health = 2
Fire = 1
Reactivity = 1

· **Other hazards**
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.

· **Additional information:**



Hilti HIT

· **Information pertaining to particular dangers for man and environment: A**
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
· **Information pertaining to particular dangers for man and environment: B**
H317 May cause an allergic skin reaction.
H400 Very toxic to aquatic life.

*
3 Composition/information on ingredients

· **Chemical characterization: Mixtures**
· **Description:**
2-Component-Foilpack, contains:
Component A: Urethane methacrylate resin, inorganic filler
Component B: Dibenzoylperoxide, phlegmatized

Mixture of the substances listed below with nonhazardous additions.

· **Dangerous components:** .

· **Dangerous components A:**		
27813-02-1	Hydroxypropyl methacrylate	5-10%
2082-81-7	tetramethylene dimethacrylate	5-10%
3290-92-4	Trimethylolpropane trimethacrylate	<2.5%
10043-35-3	Boric acid	<0.5%

.

· **Dangerous components B:**		
94-36-0	dibenzoyl peroxide	5-10%

.
· **Additional information** For the wording of the listed risk phrases refer to section 16.

4 First-aid measures

· **Description of first aid measures**
· **General information** Immediately remove any clothing soiled by the product.
· **After inhalation** Take affected persons into fresh air and keep quiet.
· **After skin contact** Immediately wash with water and soap and rinse thoroughly.
· **After eye contact** Rinse opened eye for several minutes under running water. Then consult a doctor.
· **After swallowing** Seek immediate medical advice.
· **Information for doctor**
· **Most important symptoms and effects, both acute and delayed** No further relevant information available.
· **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

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Trade name: Hilti HIT-HY 100

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5 Fire-fighting measures

· **Extinguishing media**
· **Suitable extinguishing agents**
CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
· **For safety reasons unsuitable extinguishing agents** Water with full jet.
· **Special hazards arising from the substance or mixture**
In case of fire, the following can be released:
Carbon monoxide (CO)
Nitrogen oxides (NOx)
In certain fire conditions, traces of other toxic gases cannot be excluded.
· **Advice for firefighters**
· **Protective equipment:** Wear self-contained respiratory protective device.

6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures** Wear protective clothing.
· **Environmental precautions:** Do not allow to penetrate the ground/soil.
· **Methods and material for containment and cleaning up:**
Pick up mechanically.
Dispose of the collected material according to regulations.
· **Reference to other sections**
See Section 7 for information on safe handling
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

· **Handling**
· **Precautions for safe handling** Check the expiry date: see imprint on manifold (month/year). Do not use expired mortar!
· **Information about protection against explosions and fires:**
No special measures required.
Keep ignition sources away - Do not smoke.

· **Conditions for safe storage, including any incompatibilities**
· **Storage**
· **Requirements to be met by storerooms and receptacles:**
Keep in a cool, dry and dark place; 41 °F / 5 °C to 77 °F / 25 °C.
· **Information about storage in one common storage facility:** Store away from foodstuffs.
· **Further information about storage conditions:**
Protect from heat and direct sunlight.
Store in a cool place.

· **Storage class**
As per VCI (1991) storage classification concept.
11
· **Specific end use(s)** Adhesive mortar for anchor fastenings in concrete

*
8 Exposure controls/personal protection

· **Additional information about design of technical systems:** No further data; see item 7.

· **Control parameters**
· **Components with limit values that require monitoring at the workplace:**
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
The product has a pasty consistency. Exposure limit values for respirable dusts ar not relevant for this product.

3290-92-4 Trimethylolpropane trimethacrylate	
WEEL	Long-term value: 1 mg/m³ Skin

· **Additional information:** The lists that were valid during the creation were used as basis.

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Trade name: Hilti HIT-HY 100

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· **Exposure controls**
· **Personal protective equipment**
· **General protective and hygienic measures**
The usual precautionary measures for handling chemicals should be followed.
Avoid contact with the eyes and skin.
Do not eat, drink, smoke or sniff while working.
Wash hands before breaks and at the end of work.
· **Breathing equipment:** Not required.
· **Recommended filter device for short term use:** Filter AX
· **Protection of hands:**



Protective gloves.

EN 374 / EN 388
Avoid direct contact with the chemical/ the product/ the preparation by organizational measures.
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
· **Material of gloves**
Nitrile rubber, NBR
Recommended thickness of the material: ≥ 0.12 mm
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
· **Penetration time of glove material**
The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.
· **Not suitable are gloves made of the following materials:**
Leather gloves
Strong gloves
· **Eye protection:**



Safety glasses

EN 166 / EN 170
· **Body protection:**



Protective work clothing.

9 Physical and chemical properties

· **Information on basic physical and chemical properties**	
· **General Information**	
· **Appearance:**	
Form:	Pasty
Color:	Grey
· **Odor:**	Ester-like
· **Odour threshold:**	Not determined
· **pH-value:**	Componente A: not applicable Componente B: ~ 6
· **Change in condition**	
Melting point/Melting range:	Not determined.
Boiling point/Boiling range:	undetermined
· **Flash point:**	Component A: > 109 °C (DIN EN ISO 1523) Component B: not applicable

(Contd. on page 5)

Trade name: Hilti HIT-HY 100

(Contd. of page 4)

· **Ignition temperature:**	
Decomposition temperature:	Component A: not relevant Component B: SADT 65 °C UN test H4
· **Auto igniting:**	Product is not selfigniting.
· **Danger of explosion:**	Product does not present an explosion hazard.
· **Explosion limits:**	
Lower:	Not determined
Upper:	Not determined
· **Vapor pressure at 20 °C (68 °F):**	0.01 kPa
· **Density:**	Component A: 1.7 g/cm³ (DIN 51757) Component B: 2.0 g/cm³ (DIN 51757)
· **Relative density**	Not determined
· **Vapour density**	Not determined
· **Evaporation rate**	Not determined
· **Solubility in / Miscibility with**	
Water:	Insoluble
· **Partition coefficient (n-octanol/water):**	Not determined
· **Viscosity:**	
dynamic at 20 °C (68 °F):	~70 mPas (DIN 53019)
kinematic at 20 °C (68 °F):	>20 s (ISO 2431)
· **Solvent content:**	
Organic solvents:	0 %
Water:	Component B: ~ 20%
· **Other information**	No further relevant information available.

10 Stability and reactivity

· **Reactivity**
· **Chemical stability**
· **Thermal decomposition / conditions to be avoided:** No decomposition if used and stored according to specifications.
· **Possibility of hazardous reactions** No dangerous reactions known
· **Conditions to avoid** No further relevant information available.
· **Incompatible materials:** No further relevant information available.
· **Hazardous decomposition products:** No dangerous decomposition products known

11 Toxicological information

· **Information on toxicological effects**
· **Acute toxicity:**
· **Primary irritant effect:**
· **on the skin:** No irritant effect.
· **on the eye:** No irritating effect.
· **Sensitization:** Sensitization possible through skin contact.
· **Additional toxicological information:**
The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:
Irritant

· **Carcinogenic categories**

· **NTP (National Toxicology Program)**		
14808-60-7	Quartz (SiO2)	K

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Trade name: Hilti HIT-HY 100

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12 Ecological information

· **Toxicity**

· **Aquatic toxicity:**	
3290-92-4 Trimethylolpropane trimethacrylate	
EC50/96h	4.43 mg/l (Algae) >9.22 mg/l (magna daphnia) 2 mg/l (fish)

· **Persistence and degradability** No further relevant information available.
· **Behavior in environmental systems:**
· **Bioaccumulative potential** No further relevant information available.
· **Mobility in soil** No further relevant information available.
· **Additional ecological information:**
· **According to the formulation contains the following heavy metals and compounds from the EU guideline NO. 2006/11/EC:**
None
· **General notes:** The product does not contain organically bounded halogens (AOX-free).
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **Other adverse effects** No further relevant information available.

*

13 Disposal considerations

· **Waste treatment methods**
· **Recommendation**
For disposal, local regulations issued by the authorities must be observed.
After curing, the product can be disposed of with household waste.
Full or only partially emptied cartridges must be disposed of as special waste in accordance with official regulations.

· **European waste catalogue:**	
20 01 27*	paint, inks, adhesives and resins containing dangerous substances
08 04 09*	waste adhesives and sealants containing organic solvents or other dangerous substances

· **Uncleaned packagings:**
· **Recommendation:** Dispose of packaging according to regulations on the disposal of packagings.

14 Transport information

· **UN-Number** · **DOT, ADR, ADN, IMDG, IATA**	Void
· **UN proper shipping name** · **DOT, ADR, ADN, IMDG, IATA**	Void
· **Transport hazard class(es)** · **DOT, ADR, ADN, IMDG, IATA** · **Class**	Void
· **Packing group** · **DOT, ADR, IMDG, IATA**	Void
· **Environmental hazards:** · **Marine pollutant:**	No
· **Special precautions for user**	Not applicable.
· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**	Not applicable.
· **Transport/Additional information:**	Not dangerous according to the above specifications. available oxygen content < 1 %
· **UN "Model Regulation":**	-

(Contd. on page 7)

Safety Data Sheet
acc. to ISO 11014

Printing date 05/18/2015 **Version number 2** **Reviewed on 05/18/2015**

Trade name: Hilti HIT-HY 100

(Contd. of page 6)

· **HS-Code:**	3214 10 10: Glaziers' putty, grafting putty, resin cements, caulking compounds and other mastics

15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**

· **Section 355 (Extremely hazardous substances):**

None of the ingredients is listed.

· **Section 313 (Specific toxic chemical listings):**

94-36-0	Dibenzoyl peroxide

· **TSCA (Toxic Substances Control Act):**

All ingredients are listed.

· **Proposition 65:**

· **Chemicals known to cause cancer:**

None of the ingredients are listed.

· **Cancerogenity categories**

· **EPA (Environmental Protection Agency)**

None of the ingredients is listed.

· **TLV (Threshold Limit Value established by ACGIH)**

14808-60-7	Quartz (SiO2)	A2
94-36-0	Dibenzoyl peroxide	A4
10043-35-3	Boric acid	A4

· **MAK (German Maximum Workplace Concentration)**

14808-60-7	Quartz (SiO2)	1

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

14808-60-7	Quartz (SiO2)

· **National regulations**

· **Information about limitation of use:** Employment restrictions concerning young persons must be observed.
· **Chemical safety assessment:** not required.

*

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Relevant phrases**
H241 Heating may cause a fire or explosion.
H360 May damage fertility or the unborn child.
H360 May damage fertility or the unborn child.
- - - -

Safety Data Sheet
acc. to ISO 11014

Trade name: Hilti HIT-HY 100

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· **Abbreviations and acronyms:**
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
Eye Irrit. 2A: Serious eye damage/eye irritation, Hazard Category 2A
Skin Sens. 1: Sensitisation - Skin, Hazard Category 1
Repr. 1B: Reproductive toxicity, Hazard Category 1B
Aquatic Acute 1: Hazardous to the aquatic environment - AcuteHazard, Category 1
· *** Data compared to the previous version altered.**

HIT-HY 150 MAX, A

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 11/23/2015 Revision date: 04/09/2015 Supersedes: 11/23/2015 Version: 7.1

SECTION 1: Identification

1.1. Identification

Product form	Mixture
Name	HIT-HY 150 MAX, A
Product code	BU Anchor

1.2. Relevant identified uses of the substance or mixture and uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Supplier
Hilti, Inc.
Legacy Tower, Suite 1000
75024 Plano - USA
T +1 9724035800
1-800-879-8000 toll free - F +1 918 254 0522

Department issuing data specification sheet
Hilti Entwicklungsgesellschaft mbH
Hiltistrasse 6
86916 Kaufering - Deutschland
T +49 8191 906310 - F +49 8191 90176310
anchor.hse@hilti.com

1.4. Emergency telephone number

Emergency number

Chem-Trec
Tel.: 1 800 424 9300 (USA, PR, Virgin Islands, Canada)
Tel.: 703 527 3887 (Other countries)
+1 918 8723000
1-800-879-8000 toll free

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Eye Irrit. 2A	H319 -	Causes serious eye irritation
Skin Sens. 1	H317 -	May cause an allergic skin reaction
Repr. 1B	H360 -	May damage fertility or the unborn child

Full text of H-statements: see section 16

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US)



GHS07 GHS08

Signal word (GHS-US) Danger

Hazard statements (GHS-US)
H317 - May cause an allergic skin reaction
H319 - Causes serious eye irritation
H360 - May damage fertility or the unborn child

Precautionary statements (GHS-US)
P280 - Wear eye protection, protective clothing, protective gloves
P262 - Do not get in eyes, on skin, or on clothing
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention
P337+P313 - If eye irritation persists: Get medical advice/attention
P302+P352 - If on skin: Wash with plenty of water

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%	GHS-US classification
Quartz	(CAS No) 14808-60-7	25 - 40	Carc. 1A, H350
2-Hydroxypropyl methacrylate	(CAS No) 27813-02-1	5 - 10	Eye Irrit. 2A, H319 Skin Sens. 1, H317
1,4-Butanediol dimethacrylate	(CAS No) 2082-81-7	5 - 10	Skin Sens. 1B, H317
1,1,1-Trimethylolpropane trimethacrylate	(CAS No) 3290-92-4	1 - 2.5	Not classified
1,1'-(p-tolylimino)dipropan-2-ol	(CAS No) 38668-48-3	1 - 2.5	Acute Tox. 2 (Oral), H300 Eye Irrit. 2A, H319 Aquatic Chronic 3, H412
boric acid	(CAS No) 10043-35-3	0.1 - 1	Repr. 1B, H360
4-tert-butylpyrocatechol	(CAS No) 98-29-3	0.1 - 1	Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Skin Corr. 1B, H314 Skin Sens. 1, H317 Aquatic Chronic 2, H411

Full text of H-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general: Remove/Take off immediately all contaminated clothing. Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries after skin contact: May cause an allergic skin reaction.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

No additional information available

5.2. Special hazards arising from the substance or mixture

No additional information available

5.3. Advice for firefighters

Firefighting instructions: Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures: Evacuate unnecessary personnel.

6.1.2. For emergency responders

Emergency procedures: Ventilate area.

6.2. Environmental precautions

No additional information available

6.3. Methods and material for containment and cleaning up

No additional information available

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

No additional information available

7.2. Conditions for safe storage, including any incompatibilities

Incompatible products: Strong bases. Strong acids.

Incompatible materials: Sources of ignition. Direct sunlight.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Additional information: The product has a pasty consistency. Exposure limit values for respirable dusts ar not relevant for this product.

8.2. Exposure controls

Personal protective equipment: Avoid all unnecessary exposure. Safety glasses. Gloves. Protective clothing.



SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Solid
Appearance	Thixotropic paste.
Colour	Light grey
Odour	characteristic
Odour threshold	Not determined

pH	No data available
Melting point	No data available
Freezing point	No data available
Boiling point	No data available
Flash point	> 109 °C DIN EN ISO 1523
Relative evaporation rate (butylacetate=1)	No data available
Flammability (solid, gas)	No data available
Explosive limits	No data available
Explosive properties	Product is not explosive.
Oxidising properties	No data available
Vapour pressure	No data available
Relative density	No data available
Relative vapour density at 20 °C	No data available
Density	1.74 g/cm³ DIN 66137-2
Solubility	No data available
Log Pow	No data available
Auto-ignition temperature	Not self-igniting
Decomposition temperature	No data available
Viscosity	No data available
Viscosity, kinematic	No data available
Viscosity, dynamic	70 HN-0333

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

No additional information available

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

No additional information available

10.5. Incompatible materials

Strong acids. Strong bases.

10.6. Hazardous decomposition products

No additional information available

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity	Not classified

2-Hydroxypropyl methacrylate (27813-02-1)	
LD50 oral rat	> 5000 mg/kg (Rat; OECD 401: Acute Oral Toxicity; Literature study; >=2000 mg/kg bodyweight; Rat; Experimental value)
LD50 dermal rabbit	>= 5000 mg/kg bodyweight (Rabbit; Experimental value)

1,4-Butanediol dimethacrylate (2082-81-7)	
LD50 oral rat	10066 mg/kg
LD50 dermal rat	> 3000 mg/kg
ATE US (oral)	10066.000 mg/kg bodyweight

1,1,1-Trimethylolpropane trimethacrylate (3290-92-4)	
LD50 oral rat	> 5000 mg/kg
LD50 dermal rat	> 3000 mg/kg

1,1'-(p-tolylimino)dipropan-2-ol (38668-48-3)	
LD50 oral rat	25 mg/kg
LD50 dermal rat	> 2000 mg/kg
ATE US (oral)	25.000 mg/kg bodyweight

boric acid (10043-35-3)	
LD50 oral rat	2660 mg/kg (Rat; OECD 401: Acute Oral Toxicity; Literature study; >2600 mg/kg bodyweight; Rat; Experimental value)
LD50 dermal rabbit	> 2000 mg/kg Rabbit; Experimental value; FIFRA (40 CFR)
ATE US (oral)	2660.000 mg/kg bodyweight

4-tert-butylpyrocatechol (98-29-3)	
LD50 oral rat	815 mg/kg bodyweight (Rat; Lethal; ECHA)
LD50 dermal rat	1331 mg/kg bodyweight (Rat;Lethal; ECHA)
LD50 dermal rabbit	(Rabbit)
ATE US (oral)	815.000 mg/kg bodyweight
ATE US (dermal)	1331.000 mg/kg bodyweight

Skin corrosion/irritation	Not classified
Serious eye damage/irritation	Causes serious eye irritation.
Respiratory or skin sensitisation	May cause an allergic skin reaction.
Germ cell mutagenicity	Not classified Based on available data, the classification criteria are not met
Carcinogenicity	Not classified

Quartz (14808-60-7)	
IARC group	1 - Carcinogenic to humans

Reproductive toxicity	May damage fertility or the unborn child. Based on available data, the classification criteria are not met
Specific target organ toxicity (single exposure)	Not classified
Specific target organ toxicity (repeated exposure)	Not classified
Aspiration hazard	Not classified
Potential adverse human health effects and symptoms	Based on available data, the classification criteria are not met.
Symptoms/injuries after skin contact	May cause an allergic skin reaction.

SECTION 12: Ecological information

12.1. Toxicity

2-Hydroxypropyl methacrylate (27813-02-1)	
LC50 fish 1	493 mg/l (48 h; Leuciscus idus; GLP)
EC50 Daphnia 1	> 143 mg/l (48 h; Daphnia magna; GLP)
Threshold limit algae 1	> 97.2 mg/l (72 h; Pseudokirchneriella subcapitata; GLP)
Threshold limit algae 2	> 97.2 mg/l (72 h; Pseudokirchneriella subcapitata; GLP)

1,4-Butanediol dimethacrylate (2082-81-7)	
LC50 fish 1	32.5 mg/l
LC50 other aquatic organisms 1	9.79 mg/l
NOEC (acute)	7.51 mg/l
NOEC (chronic)	20 mg/l

1,1,1-Trimethylolpropane trimethacrylate (3290-92-4)	
LC50 fish 1	2 mg/l
ErC50 (algae)	3.88 mg/l
NOEC chronic fish	0.138 mg/l
NOEC chronic crustacea	0.177 mg/l

1,1'-(p-tolylimino)dipropan-2-ol (38668-48-3)	
LC50 fish 1	≈ 17 mg/l
LC50 other aquatic organisms 1	245 mg/l
EC50 Daphnia 1	28.8 mg/l
NOEC (acute)	57.8 mg/l

boric acid (10043-35-3)	
LC50 fish 1	447 mg/l
EC50 Daphnia 1	658 - 875 mg/l (48 h; Daphnia magna)
LC50 fish 2	79 ppm (96 h; Salmo gairdneri (Oncorhynchus mykiss); Hard water)
EC50 Daphnia 2	19.7 mg/l (336 h; Daphnia magna)
TLM fish 1	1800 ppm (24 h; Gambusia affinis)
Threshold limit algae 1	5 mg/l (672 h; Elodea sp.)
Threshold limit algae 2	0.4 - 0.8,336 h; Chlorella sp.; Growth

4-tert-butylpyrocatechol (98-29-3)	
LC50 fish 1	0.12 mg/l (96 h, Danio rerio, Lethal, ECHA)
EC50 Daphnia 1	> µg/l

12.2. Persistence and degradability

HIT-HY 150 MAX, A	
Persistence and degradability	Not established.

2-Hydroxypropyl methacrylate (27813-02-1)	
Persistence and degradability	Readily biodegradable in water. No (test)data on mobility of the substance available.

1,4-Butanediol dimethacrylate (2082-81-7)	
Biodegradation	84 %

boric acid (10043-35-3)	
Persistence and degradability	Biodegradability: not applicable. Biodegradability in soil: not applicable. No (test)data on mobility of the substance available.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable

4-tert-butylpyrocatechol (98-29-3)	
ThOD	2.4 g O_2/g substance

12.3. Bioaccumulative potential

HIT-HY 150 MAX, A	
Bioaccumulative potential	Not established.

2-Hydroxypropyl methacrylate (27813-02-1)	
BCF fish 1	<= 100 (Pisces)
BCF fish 2	3.2 (Pisces; QSAR)
Log Pow	0.97 (OECD 102: Melting Point/Melting Range)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

1,4-Butanediol dimethacrylate (2082-81-7)	
Log Pow	3.1

1,1,1-Trimethylolpropane trimethacrylate (3290-92-4)	
BCF fish 2	366 l/kg
Log Pow	3.53
Log Kow	4.39

1,1'-(p-tolylimino)dipropan-2-ol (38668-48-3)	
BCF fish 1	≈
Log Kow	2.1

boric acid (10043-35-3)	
BCF fish 1	0 (Salmo gairdneri (Oncorhynchus mykiss); Chronic)
BCF fish 2	< 0.1 (60 days; Oncorhynchus tshawytscha; Fresh weight)
Log Pow	-1.09 (Experimental value; EU Method A.8: Partition Coefficient; 22 °C)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

4-tert-butylpyrocatechol (98-29-3)	
Log Pow	2.94 (Estimated value)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

12.4. Mobility in soil

boric acid (10043-35-3)	
Ecology - soil	May be harmful to plant growth, blooming and fruit formation.

12.5. Other adverse effects

Effect on the global warming: No known ecological damage caused by this product.

Other information: Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

No additional information available

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

ADR	IMDG	IATA	ADN	RID

14.1. UN number

Not regulated for transport

ADR	IMDG	IATA	ADN	RID
14.2. UN proper shipping name				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.3. Transport hazard class(es)				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.4. Packing group				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.5. Environmental hazards				
Dangerous for the environment : No	Dangerous for the environment : No Marine pollutant : No	Dangerous for the environment : No	Dangerous for the environment : No	Dangerous for the environment : No
No supplementary information available				

14.6. Special precautions for user

- Overland transport

- Transport by sea

No data available

- Air transport

No data available

- Inland waterway transport

Carriage prohibited (ADN)	No
Not subject to ADN	No

- Rail transport

Carriage prohibited (RID)	No

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

SECTION 15: Regulatory information

15.1. US Federal regulations

Quartz (14808-60-7)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	

2-Hydroxypropyl methacrylate (27813-02-1)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	

1,4-Butanediol dimethacrylate (2082-81-7)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	

1,1'-(p-tolylimino)dipropan-2-ol (38668-48-3)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	

4-tert-butylpyrocatechol (98-29-3)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
EPA TSCA Regulatory Flag	T - T - indicates a substance that is the subject of a Section 4 test rule under TSCA.

15.2. International regulations

CANADA

No additional information available

EU-Regulations

No additional information available

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Eye Irrit. 2 H319
Skin Sens. 1 H317
Full text of hazard classes and H-statements : see section 16

National regulations

Quartz (14808-60-7)
Listed on IARC (International Agency for Research on Cancer)

15.3. US State regulations

No additional information available

SECTION 16: Other information

Revision date	04/09/2015
Other information	None.

Full text of H-statements:

Acute Tox. 2 (Oral)	Acute toxicity (oral), Category 2
Acute Tox. 4 (Dermal)	Acute toxicity (dermal), Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Aquatic Chronic 2	Hazardous to the aquatic environment — Chronic Hazard, Category 2
Aquatic Chronic 3	Hazardous to the aquatic environment — Chronic Hazard, Category 3
Carc. 1A	Carcinogenicity, Category 1A
Eye Irrit. 2A	Serious eye damage/eye irritation, Category 2A
Repr. 1B	Reproductive toxicity, Category 1B
Skin Corr. 1B	Skin corrosion/irritation, Category 1B
Skin Sens. 1	Sensitisation — Skin, Category 1
Skin Sens. 1B	Sensitisation — Skin, category 1B
H300	Fatal if swallowed
H302	Harmful if swallowed
H312	Harmful in contact with skin
H314	Causes severe skin burns and eye damage
H317	May cause an allergic skin reaction
H319	Causes serious eye irritation
H350	May cause cancer
H360	May damage fertility or the unborn child
H411	Toxic to aquatic life with long lasting effects
H412	Harmful to aquatic life with long lasting effects

HIT-HY 150 MAX, A

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product

Telephone (704) 987-4555
8935 NorthPointe Executive Park Dr.
Huntersville, NC 28078
www.irwin.com

SAFETY DATA SHEET

IRWIN Chalk – Yellow, Hi-Vis	December 23, 2016
	Revision 2

1. PRODUCT and COMPANY IDENTIFICATION

Commercial Product Name: IRWIN Chalk – Yellow, Hi-Vis

Company: IRWIN Tools

Use of product: Snap line mark

Emergency contact: 1-800-464-7946 8:00am-5:00pm Monday-Friday

2. HAZARDS IDENTIFICATION

Hazards Identification: GHS Classification and Hazard Statement

Carcinogenicity – May cause cancer (lung) Category 1A, H350

Signal Word: DANGER

Precautionary Statements

P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read and understood.

P280 Wear protective gloves and eye protection.

P308 and P313 If exposed or concerned, get medical advice/attention.

P405 Store locked up.

Hazards Not Otherwise Classified or Not Covered by GHS:

Eye: May cause irritation. Chalk dust is discomforting and abrasive to the eyes.

Skin: Prolonged skin contact may cause irritation. When the product is used as intended, it is unlikely to cause discomfort.

Ingestion: Ingestion of large amounts may cause gastrointestinal irritation. Ingestion is considered an unlikely route of entry in commercial or industrial environments.

Inhalation: May cause respiratory tract irritation. When the product is used as intended, it is unlikely to cause discomfort.

Chronic: Repeated and prolonged inhalation exposure to crystalline silica dust above exposure limits may cause delayed, chronic lung injury (silicosis). When the project is used as intended, dust levels should not exceed exposure limits. See Sections 8 and 11.



DANGER

Hazard Ratings:

Hazardous Material Identification System (HMIS):

Health 2*, Flammability 0, Reactivity 0 *chronic effects

National Fire Protection Association (NFPA):

Health 2, Flammability 0, Reactivity 0

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance name	Value (%)	CAS No.	EC No.
Calcium carbonate	75 - 80	471-34-1	207-439-9
Yellow Iron Oxide	20 - 25	51274-00-1	257-098-5
Silica (crystalline quartz)[1]	0.1 - 1	14808-60-7	238-878-4

[1] Calcium carbonate may contain crystalline silica at levels between 0.1 and 1.0 % and varies naturally.

4. FIRST AID MEASURES

Inhalation: Remove from exposure and move to fresh air immediately.
Encourage the patient to blow nose to ensure clear breathing passages.
If not breathing, give artificial respiration. If breathing is difficult, give oxygen.
Get medical aid if cough or other symptoms appear.

Skin contact: Wet clothing first to minimize dust generation, then; remove contaminated clothing and shoes. Launder contaminated clothing before wearing again.
Wash affected area with water (and soap if available)
Get medical aid in the event of irritation.

Eye contact: Do not rub eyes, rubbing may cause abrasions. Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Ingestion: If the victim is conscious and alert, give 2-4 cupfuls of milk or water. Get medical aid immediately.

Additional advice: Show this safety data sheet to the doctor in attendance

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media: Substance is noncombustible, however; the containers may burn, releasing carbon monoxide, and carbon dioxide. Use appropriate extinguishing media for the combustible material involved in a fire.

Explosion: No information found.

Specific hazards: If oxidation of this product should occur, heat will be liberated which could cause surrounding combustibles to burn.

Special protective equipment for Firefighters: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Wear appropriate personal protective equipment as specified in Section 8.

Environmental precautions: Do not allow this material to be released to the environment without proper governmental permits.

Methods for cleaning up: Recover the product whenever possible. Avoid generating dust when sweeping/shoveling up. If required, wet the material with water to prevent creating dust. Pick up and place in a suitable container for reclamation or disposal. Follow applicable OSHA regulations (29 CFR 1910.120)

7. HANDLING AND STORAGE

Storage: Store this product in a tightly-closed container in a dry, well-ventilated area away from incompatible substances.

Handling: Avoid creating, or breathing dust. Practice good personal hygiene, (hand washing, etc.) after using this product. Avoid contact with skin and eyes.

Packaging material: No information found.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines

Component	CAS No.	% by weight	Exposure Limit 8-Hour TWA[1] (mg/m^3) OSHA PEL	ACGIH TLV	NIOSH REL
Calcium Carbonate (Limestone)	471-34-1; (1317-65-3)	75 - 80	15[2] 5[3]	10[2]	10[2] 5[3]
Yellow Iron Oxide-Pigment Yellow 42	51274-00-1	20 - 52	10	5[3]	5
Silica-Crystalline Quartz[4]	14808-60-7	0.1-1.0	0.05[3]	0.025[3]	0.05[3]

[1] TWA = Time-weighted average
[2] Total dust.
[3] Respirable dust.
[4] Calcium carbonate may contain crystalline silica at levels between 0.1 and 1.0 % and varies naturally.

Exposure and Engineering Controls: Facilities storing or utilizing this material should have potable water available for washing eyes and skin. Use sufficient general area (or outdoor) ventilation. Local exhaust ventilation should be used if airborne concentrations of dust exceed limits cited in Section 8.

Personal protective equipment:

Hand protection: Wear protective gloves
Eye protection: Wear safety glasses, or chemical goggles in windy conditions or where eye contact is possible.
Respiratory protection: When engineering controls are not sufficient to reduce exposure, seek professional advice prior to respirator selection and use. Follow the OSHA respirator regulations found in 29CFR 1910.134 or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.
Hygiene measures: Wash contaminated clothing before reuse.
Environmental exposure controls: No information found.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Powder
Color:	Yellow
Odor:	Odorless.
pH (at 10% solids):	8.5-9.5
Boiling point/range:	No data available.
Melting point/range:	Decomposes at 1,517 °F (825°C).
Flash point:	No data available.
Evaporation rate:	No data available.
Vapor density:	No data available.
Solubility in water:	<0.0002 (Trace)
Explosive properties:	No data available.
Oxidizing properties:	No data available.
Vapor pressure:	No data available.
Relative density (H_2O=1):	3.30-3.35
Viscosity:	No data available.
Partition coefficient (n-octanol/water):	No data available.

10. STABILITY AND REACTIVITY

Stability: Stable under normal temperatures and pressures.

Hazardous decomposition products: Carbon monoxide, carbon dioxide, calcium oxide.

Materials to avoid: Strong oxidizing agents, acids, aluminum, fluorine, magnesium, peroxides, hydrazine, calcium hypochlorite, performic acid, and bromine pentafluoride.

Conditions to avoid: Incompatible materials.

Hazardous Polymerization: Does not occur.

11. TOXICOLOGICAL INFORMATION

Note: Toxicological effects described in this section are those that would be expected based on data from the components of this product.

Acute toxicity: Calcium carbonate (CAS# 471-34-1): Draize test, rabbit, eye: 750 ug/24H Severe; Draize test, rabbit, skin: 500 mg/24H Moderate; Oral, rat: LD50 = 6,450mg/kg.

Inhalation: (Silica, crystalline quartz) Human: LC_{Lo}: 300 µg/m^3/ intermittent exposure over a 10-year period produced pulmonary system effects.

Skin contact: (Calcium carbonate) Rabbit: 500mg administered for 24 hours produces moderate skin irritation.

Eye contact: (Calcium carbonate) Rabbit: 0.750 mg administered for 24 hours produced severe irritation.

Ingestion: (Calcium carbonate) Rat: LD_{50}: 6,450 mg/kg.
(Iron Oxide) Rat: LD_{50}: >5,000 mg/kg.

Chronic toxicity/Carcinogenicity: Repeated and prolonged inhalation exposure to crystalline silica dust above exposure limits may cause delayed, chronic lung injury (silicosis). When the product is used as intended, dust levels should not exceed exposure limits.

Quartz – crystalline silica:
The International Agency for Research on Cancer (IARC) has designated this substance Group 1, “carcinogenic to humans”.
The National Toxicology Program (NTP) has designated this substance: Group K “known to be a human carcinogen”
American Conference of Governmental Industrial Hygienists (ACGIH) has designated this substance A2; suspected human carcinogen. The agent is carcinogenic in experimental animals at dose levels, by route of administration, at sites of histologic type(s) or by mechanism(s) considered relevant to worker exposure. Available epidemiologic studies are conflicting or insufficient to confirm an increased risk of cancer in exposed humans.

12. ECOLOGICAL INFORMATION

Bioaccumulation: No information found.
Ecotoxicity effects: No information found.
Fish Toxicity: Golden Orfe (Leucisus idus) LC_{Lo}: greater than 1,000 mg/l. Limestone (which is primarily composed of calcium carbonate) is not classified as a “Toxic pollutant” or a “hazardous substance under Section 307 and 311 of the United States Clean Water Act.

13. DISPOSAL CONSIDERATIONS

Waste from residues of this product is not a hazardous waste according to U.S. Environmental Protection Agency (EPA) regulations. Disposal by landfill may be acceptable.
Consult an expert on the disposal of recovered material for compliance with state, provincial, and/or local regulations.

14. TRANSPORT INFORMATION

U.S. DOT: Not regulated

ADR/RID: Not regulated

IMDG: Not regulated

ICAO/IATA: Not regulated

15. REGULATORY INFORMATION

U.S. Federal Regulations
OSHA: Ingredients are listed as air contaminants (29 CFR 1910.1000).
Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).

TSCA (Toxic Substance Control Act): All components of this product are listed on the TSCA inventory.

CERCLA: Hazardous Substance, (40 CFR 302.4): Not Listed.
Extremely Hazardous Substance (40 CFR 355): Not Listed.

SARA Hazard Category: This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following category:
"An immediate (acute) and chronic health hazard."

Chemicals subject to the reporting requirements of Section 313 or Title III of SARA and 40 CFR Part 372: None.

STATE REGULATIONS:
California's "Safe Drinking Water and Toxic Enforcement Act of 1986" (Proposition 65)

This product contains the following Proposition 65 regulated materials known to the State of California to cause cancer or reproductive harm. The listed typical amounts are a result of their natural presence in the raw materials from which this product is produced.

Silica-crystalline quartz	equal to, or less than 1.0 percent

CANADA WHIMS: This product has been classified in accordance with the hazard criteria of the Controlled Products Regulation (CPR), and the SDS contains all of the information required by the CPR.

16. OTHER INFORMATION

The contents and format of this SDS are in accordance with the U.S. Hazard Communication Standard 29 CFR 1910.1200; the Canadian CPR, and Workplace Hazardous Materials Information System (WHMIS); and EEC Commission Directive 1999/45/EC, and EEC Commission Regulation 1907/2006/EC (REACH) Annex II.

DISCLAIMER OF LIABILITY The information in this SDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use or disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. This SDS was prepared and is to be used only for this product.
If the product is used as a component in another product, this SDS information may not be applicable.

End of document

SAFETY DATA SHEET

1. Product And Company Identification

SDS ID: SDS 1200000
PRODUCT IDENTITY: Kleen Sweep™ Sweeping Compound, 1810, 1814, 1812, 1815, 1816, 1817, 1818

MANUFACTURER:
Green Kleen Products Inc.
751 7th Street
Glenwood City, WI 54013
952-544-0530

EMERGENCY PHONE NUMBER:
Chemtrec (800) 424-9300 (US and Canada)
(703) 527-3887 (International – Call Collect)
PRODUCT USE: Floor Sweeping Compound ,
used to reduce dust levels.
RESTRICTIONS ON USE: None identified

2. Hazards Identification

This product poses essentially no harm to health when used as intended, as a dust suppressant. It does contain crystalline silica (sand) and wood dust. The particle size is too large to be considered respirable.

This product has been evaluated according to GHS and 29CFR1910.1200, Appendix A. Because it contains crystalline silica (quartz) and wood dust, it is classified as:
Health Hazard Carcinogen Category 1A,
Specific Target Organ Toxicity – Repeated Exposure, Category 1



Warnings
Danger: Crystalline silica and wood dust may cause cancer when dust is inhaled. Crystalline silica causes damage to lungs through prolonged or repeated inhalation of dust.

3. Composition/Information On Ingredients

Component	CAS No.	Amount
Crystalline Silica, Quartz (sand)	14808-60-7	80-95%
Wood Dust	Mixture	5-20%
Crystalline Silica, Critistobalite	14464-46-1	<0.4%
Dust suppressants	Trade secret*	

***Information withheld as a trade secret is available on request to employees, their designated representatives, and health professionals.**

4. First Aid Measures

INHALATION: Typically not an inhalation hazard, because the sweeping compound has been treated to reduce dust formation. If irritation or other symptoms occur, move to fresh air.

INGESTION: If large amounts are swallowed, get medical attention. If conscious, give one glass of water. Never give anything by mouth to an unconscious person.

SKIN CONTACT: Wash thoroughly with soap and water.

EYE CONTACT: Immediately flush eyes with cool running water, lifting upper and lower lids. If irritation persists or for foreign body in the eye, get medical attention.

MOST IMPORTANT SYMPTOMS/EFFECTS, ACUTE AND DELAYED: Eye contact may cause mechanical irritation and possible eye injury. May cause mechanical skin and respiratory irritation. May cause cancer if respirable dust is inhaled over prolonged periods. This product contains crystalline silica. Inhalation of respirable crystalline silica may cause lung disease, silicosis with symptoms of shortness of breath and cough.

Indication of immediate medical attention and special treatment, if necessary: No immediate medical attention is required.

5. Firefighting Measures

SUITABLE EXTINGUISHING MEDIA: Use water, foam, or carbon dioxide to extinguish fire. Cool fire exposed container with water.

SPECIFIC HAZARDS ARISING FROM THE CHEMICAL: This product is not flammable but the wood dust will burn under fire conditions. Thermal decomposition may produce carbon monoxide, carbon dioxide and smoke.

SPECIAL PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIRE FIGHTERS: Firefighters should always wear self-contained breathing apparatus and full protective clothing for fires involving chemicals or in confined spaces.

6: Accidental Release Measures

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT, AND EMERGENCY PROCEDURES: No special equipment is generally required for spill clean-up. For dusty conditions, an approved respiratory may be needed. Refer to Section 8 for additional information.

Environmental hazards: Report spill as required by local and federal regulations.

METHODS AND MATERIALS FOR CONTAINMENT/CLEANUP: Eliminate ignition sources. Sweep up and collect for re-use or disposal.

7. Handling and Storage

PRECAUTIONS FOR SAFE HANDLING: Avoid breathing dust. Avoid contact with eyes, skin, and clothing. Wash thoroughly with soap and water after use. If clothing becomes dusty, launder before re-use.

CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES: Store in a dry area. Keep away from ignition sources. Store away from oxidizers.

8. Exposure Controls / Personal Protection

EXPOSURE GUIDELINES

CHEMICAL	EXPOSURE LIMIT
Crystalline Silica, Quartz	PEL (TWA) - 30 mg/m³ / %$Si0_2$+2 (Total Dust) PEL (TWA) - 10 mg/m³ / %$Si0_2$+2 (Respirable Dust) TLV (TWA) - 0.025 mg/m³ (Respirable Dust)
Wood Dust	PEL - 5 mg/m³ TWA (respirable dust) PEL - 15 mg/m³ TWA (total dust) TLV - 1 mg/m³ TWA (inhalable dust)
Crystalline Silica, Cristobalite	PEL (TWA) – ½ * 10 mg/m³ / %Si02+2 (Respirable Dust) TLV (TWA) - 0.025 mg/m³ (Respirable Dust)

APPROPRIATE ENGINEERING CONTROLS: None usually needed. Use work measures to avoid producing airborne dust.

PERSONAL PROTECTIVE EQUIPMENT:

EYE PROTECTION: Safety glasses or goggles recommended

SKIN PROTECTION: None required for normal use.

RESPIRATORY PROTECTION: None required for normal use. For operations where the dust concentration may be excessive, a dust respirator may be used. Follow OSHA regulations in the selection and use of respiratory protection.

OTHER PROTECTIVE EQUIPMENT/CLOTHING: Eye flushing equipment should be available in the work area.

9. Physical and Chemical Properties

APPEARANCE:	Granular Solid	ODOR:	Slight paraffinic odor
ODOR THRESHOLD:	Not available	pH:	Not applicable
MELTING/FREEZING POINT:	Not applicable	BOILING POINT/RANGE:	Not applicable
FLASH POINT:	None	EVAPORATION RATE:	Not applicable
FLAMMABILITY (SOLID, GAS)	Not flammable, but will burn under fire conditions	FLAMMABILITY LIMITS:	Not Applicable
VAPOR PRESSURE:	Not applicable	VAPOR DENSITY:	Not applicable
RELATIVE DENSITY:	1.24	SOLUBILITIES	Water 10%
PARTITION COEFFICIENT (n-octanol/water)	Not available	AUTOIGNITION TEMPERATURE:	Not applicable
DECOMPOSITION TEMPERATURE:	Not available	VISCOSITY:	Not applicable
Mesh size	100		

10. Stability and Reactivity

REACTIVITY: Not normally reactive

CHEMICAL STABILITY: Stable.

POSSIBILITY OF HAZARDOUS REACTIONS: Reaction with oxidizers will generate heat and may cause fire.

CONDITIONS TO AVOID: Avoid extreme heat.

INCOMPATIBLE MATERIALS: Strong oxidizing agents

HAZARDOUS DECOMPOSITION PRODUCTS: Thermal decomposition may produce carbon monoxide, carbon dioxide and smoke.

11. Toxicological Information

POTENTIAL HEALTH EFFECTS:

ACUTE HAZARDS:
INHALATION: Inhalation of dust may cause irritation to the eyes, nose, throat and respiratory tract.

SKIN CONTACT: No known hazard.

EYE CONTACT: Contact may cause mechanical, abrasive irritation with possible injury.

INGESTION: No known hazard

CHRONIC EFFECTS: None likely from normal use. This product is engineered to suppress dust.

CARCINOGENICITY LISTING:
.

ACUTE TOXICITY VALUES:

Silica:	LD50 oral rat 22,500 mg/kg
	LC50 carp >10,000mg/L/72 hr.

12. Ecological Information

ECOTOXICITY: No data available for the product.

PERSISTENCE AND DEGRADABILITY: Wood dust will degrade in the environment. Silica is non degradable.

BIOACCUMULATIVE POTENTIAL: Not bioaccumulative.

MOBILITY IN SOIL: No data available.

OTHER ADVERSE EFFECTS: No data available.

13. Disposal Considerations

Dispose in accordance with local, state and federal environmental regulations. Unused material is suitable for disposal in sanitary landfill. Used material may be subject to regulation, depending on the nature of the material absorbed. Check with appropriate regulatory authority for used material containing hazardous waste.

14. Transport Information

U.S. DOT HAZARD CLASSIFICATION:

PROPER SHIPPING NAME: Not Regulated
UN NUMBER: Not Applicable
PACKING GROUP: Not Applicable
LABELS REQUIRED: None

15. Regulatory Information

EPA SARA 311/312 HAZARD CLASSIFICATION: Chronic Health

EPA SARA 313: None

CERCLA: This product is not subject to CERCLA release reporting. Many states have more stringent reporting requirements. Report releases as required by local and state regulations.

CALIFORNIA PROPOSITION 65: This product contains respirable crystalline silica and wood dust which are known to the State of California to cause cancer.

TSCA: All of the components of this product are listed on the EPA TSCA Inventory or exempt from notification requirements.

EU REACH: Contact Oil Dri for information on REACH status.

JAPAN MITI: No data available

AICS: No data available

CANADIAN DSL: No data available

CANADIAN WHMIS CLASSIFICATION: Class D-2 A

This SDS has been prepared according to the criteria of the Controlled Products Regulation (CPR) and the SDS contains all of the information required by the CPR.

16. Other Information

NFPA RATING HEALTH: 1 FIRE: 1 REACTIVITY: 0
HMIS Rating HEALTH: 1* FIRE: 1 REACTIVITY: 0

SDS Date of Preparation/Revision: August 2017

December 17, 2014 – Conversion to Hazcom 2012 classification and labeling and format.

The information in this data sheet is believed to be accurate. However, each purchaser should make its own test to determine the suitability of the product for its purposes. GREEN KLEEN PRODUCTS INC. MAKES NO WARRANTY, EXPRESSED OR IMPLIED, WITH RESPECT TO THE PRODUCT and assumes no responsibility for any risk or liability arising from the use of the information or the product. Statements about the product should not be construed as recommendations to use the product in infringement of any patent.

Lafarge Masonry and Mortar Cement

Safety Data Sheet

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations
Revision Date: 04/15/2015 Date of issue: 04/15/2015 Supersedes Date: 12/16/2014 Version: 1.1

SECTION 1: IDENTIFICATION

Product Identifier

Product Name: Lafarge Masonry and Mortar Cement

Synonyms: Cement, Masonry Cement, Mortar Cement, Mortar Mix, Parging Mix, U.S. Cement® Custom Color Masonry Cement, Superbond, Types N, S, or M, MCN, or MCS Cement,Trinity® White, Dark and Ultra Dark Masonry Cement, and Premium Stucco Mix

Note: Cement is used as a binder in concrete and mortars that are widely used in construction.

Intended Use of the Product

This MSDS covers many types of Masonry and Mortar Cement. Individual composition of hazardous constituents will vary between types of cement.

Name, Address, and Telephone of the Responsible Party

Company

Lafarge North America Inc.
8700 West Bryn Mawr Avenue, Suite 300
Chicago, IL 60631
Information: 773-372-1000 (9am to 5pm CST)
email: SDSinfo@Lafarge.com
Website: www.lafarge-na.com

Emergency Telephone Number

Emergency Number : 1-800-451-8346 (3E Hotline)

SECTION 2: HAZARDS IDENTIFICATION

Classification of the Substance or Mixture

Classification (GHS-US)

Skin Corr. 1C H314
Eye Dam. 1 H318
Skin Sens. 1 H317
Carc. 1A H350
STOT SE 3 H335
STOT RE 1 H372

Full text of H-phrases: see section 16

Label Elements

GHS-US Labeling

Hazard Pictograms (GHS-US) :



GHS05 GHS07 GHS08

Signal Word (GHS-US) : Danger

Hazard Statements (GHS-US) :
H314 - Causes severe skin burns and eye damage.
H317 - May cause an allergic skin reaction.
H318 - Causes serious eye damage.
H335 - May cause respiratory irritation.
H350 - May cause cancer (Inhalation).
H372 - Causes damage to organs (lung/respiratory system, kidneys) through prolonged or repeated exposure (Inhalation).

Precautionary Statements (GHS-US) :
P202 - Do not handle until all safety precautions have been read and understood.
P260 - Do not breathe dust.
P264 - Wash hands, forearms, and exposed areas thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P271 - Use only outdoors or in a well-ventilated area.
P272 - Contaminated work clothing must not be allowed out of the workplace.
P280 - Wear eye protection, protective clothing, protective gloves, respiratory protection.

P301+P330+P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353 - IF ON SKIN (OR HAIR): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340 - IF INHALED: Remove person to fresh air and keep at rest in a position comfortable for breathing.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313 - If exposed or concerned: Get medical advice/attention.
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.
P362+P364 - Take off contaminated clothing and wash it before reuse.
P403+P233 - Store in a well-ventilated place. Keep container tightly closed.
P405 - Store locked up.
P501 - Dispose of contents/container in accordance with local, regional, national, territorial, provincial, and international regulations.

Other Hazards

Exposure of sufficient duration to wet cement, or to dry cement on moist areas of the body, can cause serious, potentially irreversible tissue (skin, eye, respiratory tract) damage due to chemical (caustic) burns, including third degree burns. Individuals with lung disease (e.g. bronchitis, emphysema, COPD, pulmonary disease) can be aggravated by exposure.

Unknown Acute Toxicity (GHS-US) Not available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Mixture

Name	Product Identifier	% (w/w)	Classification (GHS-US)
Cement, portland, chemicals	(CAS No) 65997-15-1	30 – 60; 60 - 100	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 STOT SE 3, H335
Limestone	(CAS No) 1317-65-3	10 - 30; 60 - 50	Not classified
Calcium hydroxide	(CAS No) 1305-62-0	< 0.1; 0.1 - 1; 1 - 5; 5 - 10; 10 - 20	Skin Irrit. 2, H315 Eye Dam. 1, H318 STOT SE 3, H335 Aquatic Acute 3, H402
Quartz	(CAS No) 14808-60-7	< 0.1; 0.1 - 1; 1 - 5; 5 - 10	Carc. 1A, H350 STOT SE 3, H335 STOT RE 1, H372
Gypsum (Ca(SO4).2H2O)	(CAS No) 13397-24-5	5 - 10	Not classified
Magnesium oxide (MgO)	(CAS No) 1309-48-4	< 0.1; 0.1 - 1; 1 - 4	Not classified
Calcium oxide	(CAS No) 1305-78-8	< 0.1; 0.1 - 1	Skin Irrit. 2, H315 Eye Dam. 1, H318 STOT SE 3, H335

More than one of the ranges of concentration prescribed by Controlled Products Regulations has been used where necessary, due to varying composition.

Cement is made from materials mined from the earth and is processed using energy provided by fuels. Trace amounts of chemicals may be detected during chemical analysis.

Full text of H-phrases: see section 16

SECTION 4: FIRST AID MEASURES

Description of First Aid Measures

General: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label if possible).

Inhalation: If inhaled, remove to fresh air and keep at rest in a position comfortable for breathing. Seek medical attention immediately.

Skin Contact: Immediately flush skin with plenty of water for at least 60 minutes. Take off immediately all contaminated clothing and wash it before reuse. Get immediate medical advice/attention.

Eye Contact: Rinse cautiously with water for at least 60 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention.

Ingestion: Rinse mouth. Do not induce vomiting. Immediately call a POISON CENTER or doctor/physician.

Most Important Symptoms and Effects Both Acute and Delayed

General: Prolonged or repeated exposure may cause damage to kidneys and respiratory system. May cause inflammation of the respiratory system and skin. Narcotic effect. May cause cancer (Inhalation). May cause an allergic skin reaction. Corrosive. Causes burns.

Inhalation: The three types of silicosis include: 1) Simple chronic silicosis – which results from long-term exposure (more than 20 years) to low amounts of respirable crystalline silica. Nodules of chronic inflammation and scarring provoked by the respirable crystalline silica form in the lungs and chest lymph nodes. This disease may feature breathlessness and may resemble chronic obstructive pulmonary disease (COPD); 2) Accelerated silicosis – occurs after exposure to larger amounts of respirable crystalline silica over a shorter period of time (5-15 years); 3) Acute silicosis – results from short-term exposure to very large amounts of respirable crystalline silica. The lungs become very inflamed and may fill with fluid, causing severe shortness of breath and low blood oxygen levels. Inflammation, scarring, and symptoms progress faster in accelerated silicosis than in simple silicosis. Progressive massive fibrosis may occur in simple or accelerated silicosis, but is more common in the accelerated form. Progressive massive fibrosis results from severe scarring and leads to the destruction of normal lung structures. Some studies show that exposure to respirable crystalline silica (without silicosis) or that the disease silicosis may be associated with the increased incidence of several autoimmune disorders such as scleroderma (thickening of the skin), systemic lupus erythematosus, rheumatoid arthritis and diseases affecting the kidneys. Silicosis increases the risk of tuberculosis. Some studies show an increased incidence of chronic kidney disease and end-stage renal disease in workers exposed to respirable crystalline silica. Corrosive to mouth, nose, throat, and lungs, may cause difficulty in breathing.

Skin Contact: Concrete may cause dry skin, discomfort, irritation, severe burns, and dermatitis. Unhardened concrete is capable of causing dermatitis by irritation and allergy. Concrete dust, in association with sweat and friction, can lead to skin irritation and dermatitis. Skin affected by dermatitis may include symptoms such as, redness, itching, rash, scaling, and cracking. Allergic contact dermatitis is caused by sensitization to hexavalent chromium (chromate) present in concrete. The reaction can range from a mild rash to severe skin ulcers.

Eye Contact: Airborne dust may cause immediate or delayed irritation or inflammation. Eye contact with large amounts of dry powder can cause severe eye irritation progressing to chemical burns and blindness. Eye exposures require immediate first aid and medical attention to prevent significant damage to the eye.

Ingestion: May cause burns or irritation of the linings of the mouth, throat, and gastrointestinal tract.

Chronic Symptoms: If dust is generated, repeated exposure through inhalation may cause cancer or lung disease. Prolonged or repeated exposure may cause damage to kidneys and respiratory system.

Indication of Any Immediate Medical Attention and Special Treatment Needed

If exposed or concerned, get medical advice and attention.

SECTION 5: FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media: Use extinguishing media appropriate for surrounding fire.

Unsuitable Extinguishing Media: Do not use a heavy water stream. Use of heavy stream of water may spread fire.

Special Hazards Arising From the Substance or Mixture

Fire Hazard: Product is not flammable.

Explosion Hazard: Product is not explosive.

Reactivity: Wet cement is alkaline and is incompatible with acids, ammonium salts and aluminum metal. Cement dissolves in hydrofluoric acid, producing corrosive silicon tetrafluoride gas. Cement reacts with water to form silicates and calcium hydroxide. Silicates react with powerful oxidizers such as fluorine, boron trifluoride, chlorine trifluoride, manganese trifluoride, and oxygen difluoride.

Advice for Firefighters

Precautionary Measures Fire: Cement is caustic. Avoid breathing dust.

Firefighting Instructions: Do not get water inside containers. Do not apply water stream directly at source of leak.

Protection During Firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

Hazardous Combustion Products: Reacts with water, resulting in a slight release of heat, depending on the amount of lime (Calcium oxide) present. Avoid contact with incompatible materials.

Reference to Other Sections

Refer to section 9 for flammability properties.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

General Measures: Avoid all contact with skin, eyes, or clothing. Avoid generating and breathing dust.

For Non-Emergency Personnel

Protective Equipment: Use appropriate personal protection equipment (PPE).

Emergency Procedures: Evacuate unnecessary personnel.

For Emergency Personnel

Protective Equipment: Equip cleanup crew with proper protection.

Emergency Procedures: Upon arrival at the scene, a first responder is expected to recognize the presence of dangerous goods, protect oneself and the public, secure the area, and call for the assistance of trained personnel as soon as conditions permit.

Environmental Precautions

Prevent entry to sewers and public waters.

Methods and Material for Containment and Cleaning Up

For Containment: Place spilled material into a container. Avoid actions that cause the cement to become airborne. Avoid inhalation of cement and contact with skin. Wear appropriate protective equipment as described in Section 8. Scrape wet cement and place in container. Allow material to dry or solidify before disposal. Do not wash cement down sewage and drainage systems or into bodies of water (e.g. streams).

Methods for Cleaning Up: Avoid actions that cause dust to become airborne during clean-up such as dry sweeping or using compressed air. Use HEPA vacuum or thoroughly wet with water to clean-up dust. Use PPE described in Section 8. Contact competent authorities after a spill.

Reference to Other Sections

See heading 8, Exposure Controls and Personal Protection. Concerning disposal elimination after cleaning, see item 13.

SECTION 7: HANDLING AND STORAGE

Precautions for Safe Handling

Additional Hazards When Processed: Proper grounding procedures to avoid static electricity should be followed. Bagged cement is heavy and poses risks such as sprains and strains to the back, arms, shoulders and legs during lifting and mixing. Handle with care and use appropriate control measures. Cutting, crushing or grinding hardened cement or other crystalline silica-bearing materials will release respirable crystalline silica. Use all appropriate measures of dust control or suppression, and Personal Protective Equipment (PPE) described in Section 8 below. Do not handle until all safety precautions have been read and understood.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures. Wash hands and other exposed areas with mild soap and water before eating, drinking, or smoking and again when leaving work. Wash contaminated clothing before reuse.

Conditions for Safe Storage, Including Any Incompatibilities

Storage Conditions: Keep bulk and bagged cement dry until used. Stack bagged material in a secure manner to prevent falling. Engulfment hazard. To prevent burial or suffocation, do not enter a confined space, such as a silo, bin, bulk truck, or other storage container or vessel that stores or contains cement. Cement can build up or adhere to the walls of a confined space. The cement can release, collapse or fall unexpectedly.

Incompatible Materials: Wet cement is alkaline and is incompatible with acids, ammonium salts and aluminum metal. Cement dissolves in hydrofluoric acid, producing corrosive silicon tetrafluoride gas. Cement reacts with water to form silicates and calcium hydroxide. Silicates react with powerful oxidizers such as fluorine, boron trifluoride, chlorine trifluoride, manganese trifluoride, and oxygen difluoride.

Specific End Use(s) Cement is used as a binder in concrete and mortars that are widely used in construction.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

For substances listed in section 3 that are not listed here, there are no established Exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), NIOSH (REL), OSHA (PEL), Canadian provincial governments, or the Mexican government

Quartz (14808-60-7)		
Mexico	OEL TWA (mg/m³)	0.1 mg/m³ (respirable fraction)

USA ACGIH	ACGIH TWA (mg/m³)	0.025 mg/m³ (respirable fraction)
USA OSHA	OSHA PEL (STEL) (mg/m³)	250 mppcf/%SiO_2+5, 10mg/m^3/%SiO_2+2
USA NIOSH	NIOSH REL (TWA) (mg/m³)	0.05 mg/m³ (respirable dust)
USA IDLH	US IDLH (mg/m³)	50 mg/m³ (respirable dust)
Alberta	OEL TWA (mg/m³)	0.025 mg/m³ (respirable particulate)
British Columbia	OEL TWA (mg/m³)	0.025 mg/m³ (respirable)
Manitoba	OEL TWA (mg/m³)	0.025 mg/m³ (respirable fraction)
New Brunswick	OEL TWA (mg/m³)	0.1 mg/m³ (respirable fraction)
Newfoundland & Labrador	OEL TWA (mg/m³)	0.025 mg/m³ (respirable fraction)
Nova Scotia	OEL TWA (mg/m³)	0.025 mg/m³ (respirable fraction)
Nunavut	OEL TWA (mg/m³)	0.1 mg/m³ (respirable mass)
Northwest Territories	OEL TWA (mg/m³)	0.1 mg/m³ (respirable mass)
Ontario	OEL TWA (mg/m³)	0.10 mg/m³ (designated substances regulation-respirable)
Prince Edward Island	OEL TWA (mg/m³)	0.025 mg/m³ (respirable fraction)
Québec	VEMP (mg/m³)	0.1 mg/m³ (respirable dust)
Saskatchewan	OEL TWA (mg/m³)	0.05 mg/m³ (respirable fraction)
Yukon	OEL TWA (mg/m³)	300 particle/mL
Limestone (1317-65-3)		
Mexico	OEL TWA (mg/m³)	10 mg/m³
Mexico	OEL STEL (mg/m³)	20 mg/m³
USA OSHA	OSHA PEL (TWA) (mg/m³)	15 mg/m³ (total dust) 5 mg/m³ (respirable fraction)
USA NIOSH	NIOSH REL (TWA) (mg/m³)	10 mg/m³ (total dust) 5 mg/m³ (respirable dust)
Alberta	OEL TWA (mg/m³)	10 mg/m³
British Columbia	OEL STEL (mg/m³)	20 mg/m³ (total dust)
British Columbia	OEL TWA (mg/m³)	10 mg/m³ (total dust)
New Brunswick	OEL TWA (mg/m³)	10 mg/m³ (particulate matter containing no Asbestos and <1% Crystalline silica)
Nunavut	OEL TWA (mg/m³)	5 mg/m³ (respirable mass)
Northwest Territories	OEL TWA (mg/m³)	5 mg/m³ (respirable mass)
Québec	VEMP (mg/m³)	10 mg/m³ (Limestone, containing no Asbestos and <1% Crystalline silica-total dust)
Saskatchewan	OEL STEL (mg/m³)	20 mg/m³
Saskatchewan	OEL TWA (mg/m³)	10 mg/m³
Yukon	OEL STEL (mg/m³)	20 mg/m³
Yukon	OEL TWA (mg/m³)	30 mppcf
Cement, portland, chemicals (65997-15-1)		
Mexico	OEL TWA (mg/m³)	10 mg/m³
Mexico	OEL STEL (mg/m³)	20 mg/m³
USA ACGIH	ACGIH TWA (mg/m³)	1 mg/m³ (particulate matter containing no asbestos and <1% crystalline silica, respirable fraction)
USA OSHA	OSHA PEL (TWA) (mg/m³)	15 mg/m³ (total dust) 5 mg/m³ (respirable fraction)
USA NIOSH	NIOSH REL (TWA) (mg/m³)	10 mg/m³ (total dust) 5 mg/m³ (respirable dust)
USA IDLH	US IDLH (mg/m³)	5000 mg/m³
Alberta	OEL TWA (mg/m³)	10 mg/m³
British Columbia	OEL TWA (mg/m³)	10 mg/m³ (total particulate matter containing no Asbestos and <1% Crystalline silica-total particulate)
Manitoba	OEL TWA (mg/m³)	1 mg/m³ (particulate matter containing no Asbestos and

		<1% Crystalline silica-respirable fraction)
New Brunswick	OEL TWA (mg/m³)	10 mg/m³ (particulate matter containing no Asbestos and <1% Crystalline silica)
Newfoundland & Labrador	OEL TWA (mg/m³)	1 mg/m³ (particulate matter containing no Asbestos and <1% Crystalline silica-respirable fraction)
Nova Scotia	OEL TWA (mg/m³)	1 mg/m³ (particulate matter containing no Asbestos and <1% Crystalline silica-respirable fraction)
Nunavut	OEL TWA (mg/m³)	5 mg/m³ (respirable mass)
Northwest Territories	OEL TWA (mg/m³)	5 mg/m³ (respirable mass)
Ontario	OEL TWA (mg/m³)	1 mg/m³ (containing no Asbestos and <1% Crystalline silica-respirable)
Prince Edward Island	OEL TWA (mg/m³)	1 mg/m³ (particulate matter containing no Asbestos and <1% Crystalline silica-respirable fraction)
Québec	VEMP (mg/m³)	10 mg/m³ (containing no Asbestos and <1% Crystalline silica-total dust)
Saskatchewan	OEL STEL (mg/m³)	20 mg/m³
Saskatchewan	OEL TWA (mg/m³)	10 mg/m³
Yukon	OEL STEL (mg/m³)	20 mg/m³
Yukon	OEL TWA (mg/m³)	30 mppcf
Calcium hydroxide (1305-62-0)		
Mexico	OEL TWA (mg/m³)	5 mg/m³
USA ACGIH	ACGIH TWA (mg/m³)	5 mg/m³
USA OSHA	OSHA PEL (TWA) (mg/m³)	15 mg/m³ (total dust) 5 mg/m³ (respirable fraction)
USA NIOSH	NIOSH REL (TWA) (mg/m³)	5 mg/m³
Alberta	OEL TWA (mg/m³)	5 mg/m³
British Columbia	OEL TWA (mg/m³)	5 mg/m³
Manitoba	OEL TWA (mg/m³)	5 mg/m³
New Brunswick	OEL TWA (mg/m³)	5 mg/m³
Newfoundland & Labrador	OEL TWA (mg/m³)	5 mg/m³
Nova Scotia	OEL TWA (mg/m³)	5 mg/m³
Nunavut	OEL STEL (mg/m³)	10 mg/m³
Nunavut	OEL TWA (mg/m³)	5 mg/m³
Northwest Territories	OEL STEL (mg/m³)	10 mg/m³
Northwest Territories	OEL TWA (mg/m³)	5 mg/m³
Ontario	OEL TWA (mg/m³)	5 mg/m³
Prince Edward Island	OEL TWA (mg/m³)	5 mg/m³
Québec	VEMP (mg/m³)	5 mg/m³
Saskatchewan	OEL STEL (mg/m³)	10 mg/m³
Saskatchewan	OEL TWA (mg/m³)	5 mg/m³
Yukon	OEL STEL (mg/m³)	10 mg/m³
Yukon	OEL TWA (mg/m³)	5 mg/m³
Magnesium oxide (MgO) (1309-48-4)		
Mexico	OEL TWA (mg/m³)	10 mg/m³ (fume)
USA ACGIH	ACGIH TWA (mg/m³)	10 mg/m³ (inhalable fraction)
USA OSHA	OSHA PEL (TWA) (mg/m³)	15 mg/m³ (fume, total particulate)
USA IDLH	US IDLH (mg/m³)	750 mg/m³ (fume)
Alberta	OEL TWA (mg/m³)	10 mg/m³ (fume)
British Columbia	OEL STEL (mg/m³)	10 mg/m³ (respirable dust and fume)
British Columbia	OEL TWA (mg/m³)	10 mg/m³ (fume, inhalable)
Manitoba	OEL TWA (mg/m³)	10 mg/m³ (inhalable fraction)

New Brunswick	OEL TWA (mg/m³)	10 mg/m³ (fume)
Newfoundland & Labrador	OEL TWA (mg/m³)	10 mg/m³ (inhalable fraction)
Nova Scotia	OEL TWA (mg/m³)	10 mg/m³ (inhalable fraction)
Nunavut	OEL STEL (mg/m³)	20 mg/m³ (fume)
Nunavut	OEL TWA (mg/m³)	10 mg/m³ (fume)
Northwest Territories	OEL STEL (mg/m³)	20 mg/m³ (fume)
Northwest Territories	OEL TWA (mg/m³)	10 mg/m³ (fume)
Ontario	OEL TWA (mg/m³)	10 mg/m³ (inhalable)
Prince Edward Island	OEL TWA (mg/m³)	10 mg/m³ (inhalable fraction)
Québec	VEMP (mg/m³)	10 mg/m³ (fume)
Saskatchewan	OEL STEL (mg/m³)	20 mg/m³ (inhalable fraction)
Saskatchewan	OEL TWA (mg/m³)	10 mg/m³ (inhalable fraction)
Yukon	OEL STEL (mg/m³)	10 mg/m³ (fume)
Yukon	OEL TWA (mg/m³)	10 mg/m³ (fume)
Gypsum (Ca(SO4).2H2O) (13397-24-5)		
Mexico	OEL TWA (mg/m³)	10 mg/m³ (inhalable fraction)
USA ACGIH	ACGIH TWA (mg/m³)	10 mg/m³ (inhalable fraction)
USA OSHA	OSHA PEL (TWA) (mg/m³)	15 mg/m³ (total dust) 5 mg/m³ (respirable fraction)
USA NIOSH	NIOSH REL (TWA) (mg/m³)	10 mg/m³ (total dust) 5 mg/m³ (respirable dust)
Alberta	OEL TWA (mg/m³)	10 mg/m³
British Columbia	OEL STEL (mg/m³)	20 mg/m³ (total dust)
British Columbia	OEL TWA (mg/m³)	10 mg/m³ (total dust)
Manitoba	OEL TWA (mg/m³)	10 mg/m³ (inhalable fraction)
Newfoundland & Labrador	OEL TWA (mg/m³)	10 mg/m³ (inhalable fraction)
Nova Scotia	OEL TWA (mg/m³)	10 mg/m³ (inhalable fraction)
Nunavut	OEL TWA (mg/m³)	5 mg/m³ (respirable mass)
Northwest Territories	OEL TWA (mg/m³)	5 mg/m³ (respirable mass)
Ontario	OEL TWA (mg/m³)	10 mg/m³ (inhalable)
Prince Edward Island	OEL TWA (mg/m³)	10 mg/m³ (inhalable fraction)
Québec	VEMP (mg/m³)	10 mg/m³ (containing no Asbestos and <1% Crystalline silica-total dust)
Saskatchewan	OEL STEL (mg/m³)	20 mg/m³
Saskatchewan	OEL TWA (mg/m³)	10 mg/m³
Yukon	OEL STEL (mg/m³)	20 mg/m³
Yukon	OEL TWA (mg/m³)	30 mppcf
Calcium oxide (1305-78-8)		
Mexico	OEL TWA (mg/m³)	2 mg/m³
USA ACGIH	ACGIH TWA (mg/m³)	2 mg/m³
USA OSHA	OSHA PEL (TWA) (mg/m³)	5 mg/m³
USA NIOSH	NIOSH REL (TWA) (mg/m³)	2 mg/m³
USA IDLH	US IDLH (mg/m³)	25 mg/m³
Alberta	OEL TWA (mg/m³)	2 mg/m³
British Columbia	OEL TWA (mg/m³)	2 mg/m³
Manitoba	OEL TWA (mg/m³)	2 mg/m³
New Brunswick	OEL TWA (mg/m³)	2 mg/m³
Newfoundland & Labrador	OEL TWA (mg/m³)	2 mg/m³
Nova Scotia	OEL TWA (mg/m³)	2 mg/m³
Nunavut	OEL STEL (mg/m³)	4 mg/m³
Nunavut	OEL TWA (mg/m³)	2 mg/m³

Northwest Territories	OEL STEL (mg/m³)	4 mg/m³
Northwest Territories	OEL TWA (mg/m³)	2 mg/m³
Ontario	OEL TWA (mg/m³)	2 mg/m³
Prince Edward Island	OEL TWA (mg/m³)	2 mg/m³
Québec	VEMP (mg/m³)	2 mg/m³
Saskatchewan	OEL STEL (mg/m³)	4 mg/m³
Saskatchewan	OEL TWA (mg/m³)	2 mg/m³
Yukon	OEL STEL (mg/m³)	4 mg/m³
Yukon	OEL TWA (mg/m³)	2 mg/m³

Exposure Controls

Appropriate Engineering Controls: Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Use local exhaust or general dilution ventilation or other suppression methods to maintain dust levels below exposure limits. Power equipment should be equipped with proper dust collection devices.

Personal Protective Equipment: Gloves. In case of dust production: protective goggles. Insufficient ventilation: wear respiratory protection. Protective clothing.



Materials for Protective Clothing: Chemically resistant materials and fabrics.

Hand Protection: Impermeable protective gloves.

Eye Protection: Wear ANSI approved glasses or safety goggles when handling dust or wet cement to prevent contact with eyes. Wearing contact lenses when using cement, under dusty conditions, is not recommended.

Skin and Body Protection: Wear gloves, boot covers, and protective clothing impervious to water to prevent skin contact.

Respiratory Protection: Wear a NIOSH approved respirator that is properly fitted and is in good condition when exposed to dust above exposure limits.

Other Information: When using, do not eat, drink, or smoke.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on Basic Physical and Chemical Properties

Physical State	:	Solid
Appearance	:	Gray, buff, or white powder
Odor	:	Odorless
Odor Threshold	:	Not available
pH	:	12 - 13
Evaporation Rate	:	Not available
Melting Point	:	Not available
Freezing Point	:	Not available
Boiling Point	:	> 1000 °C (> 1832 °F)
Flash Point	:	Not available
Auto-ignition Temperature	:	Not available
Decomposition Temperature	:	Not available
Flammability (solid, gas)	:	Not available
Lower Flammable Limit	:	Not available
Upper Flammable Limit	:	Not available
Vapor Pressure	:	Not available
Relative Vapor Density at 20 °C	:	Not available
Relative Density	:	2.65 - 3.15
Specific Gravity	:	Not available
Solubility	:	Slight; Water: 0.1 - 1 %
Partition Coefficient: N-Octanol/Water	:	Not available

Viscosity	:	Not available
Explosion Data – Sensitivity to Mechanical Impact	:	Not expected to present an explosion hazard due to mechanical impact.
Explosion Data – Sensitivity to Static Discharge	:	Not expected to present an explosion hazard due to static discharge.

SECTION 10: STABILITY AND REACTIVITY

Reactivity: Wet cement is alkaline and is incompatible with acids, ammonium salts and aluminum metal. Cement dissolves in hydrofluoric acid, producing corrosive silicon tetrafluoride gas. Cement reacts with water to form silicates and calcium hydroxide. Silicates react with powerful oxidizers such as fluorine, boron trifluoride, chlorine trifluoride, manganese trifluoride, and oxygen difluoride.

Chemical Stability: Stable. Keep dry until use. Avoid contact with incompatible materials.

Possibility of Hazardous Reactions: Hazardous polymerization will not occur.

Conditions to Avoid: Extremely high or low temperatures. Incompatible materials.

Incompatible Materials: Strong acids, strong bases, strong oxidizers.

Hazardous Decomposition Products: Reacts with water, resulting in a slight release of heat, depending on the amount of lime (Calcium oxide) present. Avoid contact with incompatible materials.

SECTION 11: TOXICOLOGICAL INFORMATION

Information on Toxicological Effects - Product

Acute Toxicity: Not classified

LD50 and LC50 Data: Not available

Skin Corrosion/Irritation: Causes severe skin burns and eye damage.

pH: 12 - 13

Serious Eye Damage/Irritation: Causes serious eye damage.

pH: 12 - 13

Respiratory or Skin Sensitization: May cause an allergic skin reaction.

Germ Cell Mutagenicity: Not classified

Teratogenicity: Not available

Carcinogenicity: May cause cancer (Inhalation).

Specific Target Organ Toxicity (Repeated Exposure): Causes damage to organs (lung/respiratory system, kidneys) through prolonged or repeated exposure (Inhalation).

Reproductive Toxicity: Not classified

Specific Target Organ Toxicity (Single Exposure): May cause respiratory irritation.

Aspiration Hazard: Not classified

Symptoms/Injuries After Inhalation: The three types of silicosis include: 1) Simple chronic silicosis – which results from long-term exposure (more than 20 years) to low amounts of respirable crystalline silica. Nodules of chronic inflammation and scarring provoked by the respirable crystalline silica form in the lungs and chest lymph nodes. This disease may feature breathlessness and may resemble chronic obstructive pulmonary disease (COPD); 2) Accelerated silicosis – occurs after exposure to larger amounts of respirable crystalline silica over a shorter period of time (5-15 years); 3) Acute silicosis – results from short-term exposure to very large amounts of respirable crystalline silica. The lungs become very inflamed and may fill with fluid, causing severe shortness of breath and low blood oxygen levels. Inflammation, scarring, and symptoms progress faster in accelerated silicosis than in simple silicosis. Progressive massive fibrosis may occur in simple or accelerated silicosis, but is more common in the accelerated form. Progressive massive fibrosis results from severe scarring and leads to the destruction of normal lung structures. Some studies show that exposure to respirable crystalline silica (without silicosis) or that the disease silicosis may be associated with the increased incidence of several autoimmune disorders such as scleroderma (thickening of the skin), systemic lupus erythematosus, rheumatoid arthritis and diseases affecting the kidneys. Silicosis increases the risk of tuberculosis. Some studies show an increased incidence of chronic kidney disease and end-stage renal disease in workers exposed to respirable crystalline silica. Irritating to mouth, nose, throat, and lungs, may cause difficulty in breathing.

Symptoms/Injuries After Skin Contact: Concrete may cause dry skin, discomfort, irritation, severe burns, and dermatitis. Unhardened concrete is capable of causing dermatitis by irritation and allergy. Concrete dust, in association with sweat and friction, can lead to skin irritation and dermatitis. Skin affected by dermatitis may include symptoms such as, redness, itching, rash, scaling, and cracking. Allergic contact dermatitis is caused by sensitization to hexavalent chromium (chromate) present in concrete. The reaction can range from a mild rash to severe skin ulcers.

Symptoms/Injuries After Eye Contact: Airborne dust may cause immediate or delayed irritation or inflammation. Eye contact with large amounts of dry powder can cause severe eye irritation progressing to chemical burns and blindness. Eye exposures require immediate first aid and medical attention to prevent significant damage to the eye.

Symptoms/Injuries After Ingestion: May cause burns or irritation of the linings of the mouth, throat, and gastrointestinal tract.

Chronic Symptoms: If dust is generated, repeated exposure through inhalation may cause cancer or lung disease. Causes damage to organs.

Information on Toxicological Effects - Ingredient(s)

LD50 and LC50 Data:

Quartz (14808-60-7)	
LD50 Oral Rat	> 5000 mg/kg
LD50 Dermal Rat	> 5000 mg/kg

Calcium hydroxide (1305-62-0)	
LD50 Oral Rat	7340 mg/kg

Calcium oxide (1305-78-8)	
LD50 Oral Rat	> 2000 mg/kg
LD50 Dermal Rabbit	> 2500 mg/kg

Quartz (14808-60-7)	
IARC Group	1
National Toxicology Program (NTP) Status	Known Human Carcinogens.

SECTION 12: ECOLOGICAL INFORMATION

Toxicity **No additional information available**

Calcium hydroxide (1305-62-0)	
LC50 Fish 1	50.6 mg/l

Calcium oxide (1305-78-8)	
LC50 Fish 1	1070 mg/l (Exposure time: 96 h - Species: Cyprinus carpio [static])

Persistence and Degradability Not available

Bioaccumulative Potential

Calcium hydroxide (1305-62-0)	
BCF Fish 1	(no bioaccumulation)

Calcium oxide (1305-78-8)	
BCF Fish 1	(no bioaccumulation)

Mobility in Soil Not available

Other Adverse Effects Not available

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal Recommendations: Dispose of waste material in accordance with all local, regional, state, national, provincial, territorial and international regulations.

Additional Information: If discarded in its purchased form, this product would not be a hazardous waste either by listing or characteristic. However, under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste.

SECTION 14: TRANSPORT INFORMATION

In Accordance with DOT Not regulated for transport

In Accordance with IMDG Not regulated for transport

In Accordance with IATA Not regulated for transport

In Accordance with TDG Not regulated for transport

SECTION 15: REGULATORY INFORMATION

US Federal Regulations

Lafarge Masonry and Mortar Cement	
SARA Section 311/312 Hazard Classes	Delayed (chronic) health hazard

	Immediate (acute) health hazard

Quartz (14808-60-7)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

Limestone (1317-65-3)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

Cement, portland, chemicals (65997-15-1)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

Calcium hydroxide (1305-62-0)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

Magnesium oxide (MgO) (1309-48-4)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

Calcium oxide (1305-78-8)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

US State Regulations

Quartz (14808-60-7)	
U.S. - California - Proposition 65 - Carcinogens List	WARNING: This product contains chemicals known to the State of California to cause cancer.

Quartz (14808-60-7)
U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

Limestone (1317-65-3)
U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

Cement, portland, chemicals (65997-15-1)
U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

Calcium hydroxide (1305-62-0)
U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

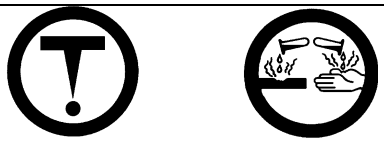
Magnesium oxide (MgO) (1309-48-4)
U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

Gypsum (Ca(SO4).2H2O) (13397-24-5)
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

Calcium oxide (1305-78-8)
U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

Canadian Regulations

Lafarge Masonry and Mortar Cement	
WHMIS Classification	Class D Division 2 Subdivision A - Very toxic material causing other toxic effects Class E - Corrosive Material Class D Division 2 Subdivision B - Toxic material causing other toxic effects



Quartz (14808-60-7)	
Listed on the Canadian DSL (Domestic Substances List) Listed on the Canadian IDL (Ingredient Disclosure List)	
IDL Concentration 1 %	
WHMIS Classification	Class D Division 2 Subdivision A - Very toxic material causing other toxic effects

Limestone (1317-65-3)	
Listed on the Canadian NDSL (Non-Domestic Substances List)	
WHMIS Classification	Uncontrolled product according to WHMIS classification criteria

Cement, portland, chemicals (65997-15-1)	
Listed on the Canadian DSL (Domestic Substances List) Listed on the Canadian IDL (Ingredient Disclosure List)	
WHMIS Classification	Class E - Corrosive Material Class D Division 2 Subdivision B - Toxic material causing other toxic effects

Calcium hydroxide (1305-62-0)	
Listed on the Canadian DSL (Domestic Substances List) Listed on the Canadian IDL (Ingredient Disclosure List)	
IDL Concentration 1 %	
WHMIS Classification	Class E - Corrosive Material Class D Division 2 Subdivision B - Toxic material causing other toxic effects

Magnesium oxide (MgO) (1309-48-4)	
Listed on the Canadian DSL (Domestic Substances List) Listed on the Canadian IDL (Ingredient Disclosure List)	
IDL Concentration 1 %	
WHMIS Classification	Uncontrolled product according to WHMIS classification criteria

Calcium oxide (1305-78-8)	
Listed on the Canadian DSL (Domestic Substances List) Listed on the Canadian IDL (Ingredient Disclosure List)	
IDL Concentration 1 %	
WHMIS Classification	Class E - Corrosive Material Class D Division 2 Subdivision B - Toxic material causing other toxic effects

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all of the information required by CPR.

SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

Revision Date : 04/15/2015

Other Information : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.

GHS Full Text Phrases:

Aquatic Acute 3	Hazardous to the aquatic environment - Acute Hazard Category 3
Carc. 1A	Carcinogenicity Category 1A
Eye Dam. 1	Serious eye damage/eye irritation Category 1
Skin Corr. 1C	Skin corrosion/irritation Category 1C
Skin Irrit. 2	Skin corrosion/irritation Category 2
Skin Sens. 1	Skin sensitization Category 1
STOT RE 1	Specific target organ toxicity (repeated exposure) Category 1
STOT SE 3	Specific target organ toxicity (single exposure) Category 3

H314	Causes severe skin burns and eye damage
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H318	Causes serious eye damage
H335	May cause respiratory irritation
H350	May cause cancer
H372	Causes damage to organs through prolonged or repeated exposure
H402	Harmful to aquatic life

Party Responsible for the Preparation of This Document

Lafarge North America Inc.

+1 773-372-1000 (9am to 5pm CST)

An electronic version of this SDS is available at: www.lafarge-na.com under the Sustainability and Products sections. Please direct any inquiries regarding the content of this SDS to SDSinfo@Lafarge.com.

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NO WARRANTY IS MADE, EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR OTHERWISE.

North America GHS US 2012 & WHMIS 2

Safety Data Sheet
acc. to OSHA HCS

Printing Date 02/18/2015 Revision Number 3 Revision Date 02/17/2015

*
1 Identification

· **Product identifier**

· **Trade name: Lap Rite™**

· **Article number:** 730418
· **Relevant identified uses of the substance or mixture.** Sealant
· **Application of the substance / the mixture** Sealant

· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
Royal Adhesives & Sealants, LLC
4401 Page Avenue. P. O. Box 457
Michigan Center, MI 49254
Information Phone Number: 517-764-0334

· **Information department:** Environment protection department.
· **Emergency telephone number:**
ChemTrec: Day or Night within USA and Canada: 1-800-424-9300.
Outside USA and Canada: +1 703-741-5970 (collect calls accepted)

*
2 Hazard(s) identification

· **Classification of the substance or mixture**



GHS08 Health hazard

Carc. 2 H351 Suspected of causing cancer.



GHS07

Skin Irrit. 2 H315 Causes skin irritation.
Eye Irrit. 2A H319 Causes serious eye irritation.

· **Label elements**
· **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
· **Hazard pictograms**



GHS07 GHS08

· **Signal word** Warning
· **Hazard statements**
Causes skin irritation.
Causes serious eye irritation.
Suspected of causing cancer.
· **Precautionary statements**
If medical advice is needed, have product container or label at hand.
Keep out of reach of children.

(Contd. on page 2)

Safety Data Sheet
acc. to OSHA HCS

Trade name: Lap Rite™

(Contd. of page 1)

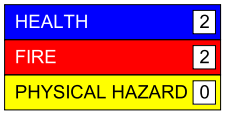
Read label before use.
Wear protective gloves.
Wear eye protection / face protection.
Wash thoroughly after handling.
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
Continue rinsing.
Specific treatment (see on this label).
IF exposed or concerned: Get medical advice/attention.
If skin irritation occurs: Get medical advice/attention.
If eye irritation persists: Get medical advice/attention.
If on skin: Wash with plenty of water.
Take off contaminated clothing and wash it before reuse.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Classification system:**
· **NFPA ratings (scale 0 - 4)**



Health = 2
Fire = 2
Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**



Health = 2
Fire = 2
Physical Hazard = 0

· **Other hazards**
· **Results of PBT and vPvB assessment**
· **PBT:** *Not applicable.*
· **vPvB:** *Not applicable.*

*
3 Composition/information on ingredients

· **Chemical characterization: Mixtures**
· **Description:** *Mixture of the substances listed below with nonhazardous additions.*

· **Dangerous components:**		
471-34-1	calcium carbonate	25-50%
64742-55-8	Distillates (petroleum), hydrotreated light paraffinic	5-20%
1332-58-7	Kaolin	2.5-10%
8052-41-3	Stoddard solvent (mineral spirits)	2.5-10%
1317-65-3	Limestone	2.5-10%
546-93-0	Magnesite	2.5-10%
68953-58-2	organoclay [containing 0-3% quartz CAS 14808-60-7]	≤2.5%
1305-78-8	calcium oxide	≤2.5%
112926-00-8	Precipitated silica (Silica-Amorphous)	≤1.0%
13463-67-7	titanium dioxide	≤1.0%
	Amorphous Fumed Silica	≤0.1%

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14808-60-7	Quartz (SiO2)	≤0.03%
1333-86-4	Carbon black	≤0.03%

· **Additional information:**
It is highly unlikely the powders and pigments compounded within this product would pose a hazardous risk from inhalation as they are no longer a respirable particulate. Exposure to these ingredients as used in sealants, putties, bedding compounds and other non-sprayable products is highly unlikely. The concentrations listed in the composition section are percent by weight unless a gas. Gas concentrations are expressed in percent by volume.

4 First-aid measures

· **Description of first aid measures**
· **After inhalation:**
Call a doctor immediately.
Overexposure, remove to fresh air and seek medical attention.
· **After skin contact:**
Wipe excess from skin.
Immediately wash with water and soap and rinse thoroughly.
· **After eye contact:**
Rinse opened eye for 20 minutes under running water. If eye becomes irritated, obtain medical treatment.
· **After swallowing:** Seek medical treatment.
· **Most important symptoms and effects, both acute and delayed** No further relevant information available.
· **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Fire-fighting measures

· **Extinguishing media**
· **Suitable extinguishing agents:** CO2, extinguishing powder or water spray. Fight larger fires with water spray.
· **Special hazards arising from the substance or mixture** No further relevant information available.
· **Advice for firefighters**
· **Protective equipment:** Protective clothing and respiratory protective device.

*
6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures** Ensure adequate ventilation
· **Environmental precautions:** Do not allow product to reach sewage system or any water course.
· **Methods and material for containment and cleaning up:**
Dispose of contaminated material as waste in accordance with federal state and local regulations.
Ensure adequate ventilation.
· **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

· **Precautions for safe handling** Open and handle receptacle with care.
· **Information about protection against explosions and fires:**
Keep container closed when not in use.

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Keep respiratory protective device available.

· **Conditions for safe storage, including any incompatibilities**
· **Storage:**
· **Requirements to be met by storerooms and receptacles:** No special requirements.
· **Information about storage in one common storage facility:** Keep away from open flames and high temperatures.
· **Further information about storage conditions:** Keep receptacle tightly sealed.
· **Specific end use(s)** No further relevant information available.

*
8 Exposure controls/personal protection

· **Additional information about design of technical systems:** No further data.

· **Control parameters**

· **Components with limit values that require monitoring at the workplace:**	
471-34-1 calcium carbonate	
PEL	Long-term value: 15* 5** mg/m³ *total dust **respirable fraction
REL	Long-term value: 10* 5** mg/m³ *total dust **respirable fraction
TLV	TLV withdrawn
1332-58-7 Kaolin	
PEL	Long-term value: 15* 5** mg/m³ *total dust **respirable fraction
REL	Long-term value: 10* 5** mg/m³ *total dust **respirable fraction
TLV	Long-term value: 2* mg/m³ E; as respirable fraction
8052-41-3 Stoddard solvent (mineral spirits)	
PEL	Long-term value: 2900 mg/m³, 500 ppm
REL	Long-term value: 350 ppm Ceiling limit value: 1800* mg/m³ *15-min
TLV	Long-term value: 525 mg/m³, 100 ppm
546-93-0 Magnesite	
PEL	Long-term value: 15* 5** mg/m³ *total dust **respirable fraction
REL	Long-term value: 10* 5** mg/m³ *total dust **respirable fraction
TLV	TLV withdrawn
1305-78-8 calcium oxide	
PEL	Long-term value: 5 mg/m³
REL	Long-term value: 2 mg/m³
TLV	Long-term value: 2 mg/m³
112926-00-8 Precipitated silica (Silica-Amorphous)	
PEL	20mppcf or 80mg/m3 /%SiO2
REL	Long-term value: 6 mg/m³ See Pocket Guide App. C

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TLV	TLV withdrawn
13463-67-7 titanium dioxide	
PEL	Long-term value: 15* mg/m³ *total dust
REL	See Pocket Guide App. A
TLV	Long-term value: 10 mg/m³ withdrawn from NIC
14808-60-7 Quartz (SiO2)	
PEL	see Quartz listing
REL	Long-term value: 0.05* mg/m³ *respirable dust; See Pocket Guide App. A
TLV	Long-term value: 0.025* mg/m³ *as respirable fraction
1333-86-4 Carbon black	
PEL	Long-term value: 3.5 mg/m³
REL	Long-term value: 3.5* mg/m³ *0.1 in presence of PAHs;See Pocket Guide Apps.A+C
TLV	Long-term value: 3* mg/m³ *inhalable fraction

· **Additional information:** The lists that were valid during the creation were used as basis.

· **Exposure controls**
· **Personal protective equipment (see listings below)**
· **General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Store protective clothing separately.
· **Breathing equipment:**
Use approved respiratory protection equipment when airborne exposure is excessive. Consult the respirator manufacturer to determine the appropriate type of equipment for a given application. Observe respirator use limitations specified by the manufacturer.
· **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
· **Material of gloves**
Protective gloves.
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
· **Penetration time of glove material**
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

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· **Eye protection:**
Safety glasses with side shields.



Tightly sealed goggles

· **Body protection:** Protective work clothing

*
9 Physical and chemical properties

· **Information on basic physical and chemical properties**	
· **General Information**	
· **Appearance:**	
Form:	Pasty
Color:	Gray
· **Odor:**	Hydrocarbon-like
· **Odour threshold:**	Not determined.
· **pH-value:**	Not applicable.
· **Change in condition**	
Melting point:	Undetermined.
Boiling point:	
· **Flash point:**	Not applicable.
· **Flammability (solid, gaseous):**	Not determined.
· **Ignition temperature:**	230 °C (446 °F)
· **Decomposition temperature:**	Not determined.
· **Auto igniting:**	Product is not selfigniting.
· **Danger of explosion:**	Product does not present an explosion hazard.
· **Flammable limits:**	
Lower:	1.1 Vol %
Upper:	6.0 Vol %
· **Vapor pressure:**	Not applicable.
· **Specific gravity at 20 °C (68 °F):**	1.4 g/cm³ (11.683 lbs/gal)
· **Relative density**	Not determined.
· **Vapour density**	Not applicable.
· **Solubility in / Miscibility with**	
Water:	Insoluble
· **Partition coefficient (n-octanol/water):**	Not determined.
· **Viscosity:**	
Dynamic:	Not applicable.
Kinematic:	>20.5cSt
· **Solvent content:**	
Organic solvents:	0.0 %
Solids content:	85.0 %

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· **Other information** VOC < 150 g/L

10 Stability and reactivity

· **Reactivity**
· **Chemical stability**
· **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
· **Possibility of hazardous reactions** No dangerous reactions known.
· **Conditions to avoid** Heat, flames, sparks.
· **Incompatible materials:** Reacts with strong oxidizing agents.
· **Hazardous decomposition products:** No dangerous decomposition products known.

*
11 Toxicological information

· **Information on toxicological effects**
· **Acute toxicity:**
· **Primary irritant effect:**
· **on the skin:** May irritate the skin.
· **on the eye:** May irritate the eye.
· **Sensitization:** No sensitizing effects known.
· **Additional toxicological information:**
Due to the form of this product, exposure to the potentially carcinogenic components is not expected.

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**		
112926-00-8	Precipitated silica (Silica-Amorphous)	3
13463-67-7	titanium dioxide	2B
14808-60-7	Quartz (SiO2)	1
1333-86-4	Carbon black	2B
100-41-4	ethylbenzene	2B

· **NTP (National Toxicology Program)**		
14808-60-7	Quartz (SiO2)	K

· **OSHA-Ca (Occupational Safety & Health Administration)**
None of the ingredients is listed.

*
12 Ecological information

· **Toxicity**
· **Aquatic toxicity:** Not expected to be harmful to aquatic organisms.
· **Persistence and degradability** No further relevant information available.
· **Bioaccumulative potential** No further relevant information available.
· **Mobility in soil** No further relevant information available.
· **Additional ecological information:**
· **General notes:** Do not allow product to reach ground water, water course or sewage system.
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.

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· **Other adverse effects** No further relevant information available.

*
13 Disposal considerations

· **Waste treatment methods**
· **Recommendation:**
Small amounts can be disposed of with household waste after the product has cured or skinned over. Larger quantities should be disposed of according to state and local regulation.

· **Uncleaned packagings:**
· **Recommendation:** Disposal must be made according to official regulations.

*
14 Transport information

· **UN-Number**	
· **DOT, ADR, ADN, IMDG, IATA**	not regulated
· **UN proper shipping name**	
· **DOT, ADR, ADN, IMDG, IATA**	not regulated
· **Transport hazard class(es)**	
· **DOT, ADR, ADN, IMDG, IATA**	
· **Class**	not regulated
· **Packing group**	
· **DOT, ADR, IMDG, IATA**	not regulated
· **Environmental hazards:**	Not applicable.
· **Special precautions for user**	Not applicable.
· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**	Not applicable.
· **Transport/Additional information:**	This product is not classified as a Division 4.1Flammable Solids according to UN Test N.1 Test Method for Readily Combustibile Solids.
· **UN "Model Regulation":**	-

*
15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**
· **Sara**

· **Section 355 (extremely hazardous substances):**
None of the ingredients is listed.

· **Section 313 (Specific toxic chemical listings):**

100-41-4	ethylbenzene

· **TSCA (Toxic Substances Control Act):**
All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements.

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· **Proposition 65**

· **Chemicals known to cause cancer:**	
13463-67-7	titanium dioxide
1333-86-4	Carbon black
100-41-4	ethylbenzene

· **Chemicals known to cause reproductive toxicity:**
None of the ingredients is listed.

· **(DSL) Canada Dosmestic Substance List**
All components of this product are on the DSL(Canada Domestic Substance list) or are exempt from DSL requirements.

· **Cancerogenity categories**

· **EPA (Environmental Protection Agency)**		
100-41-4	ethylbenzene	D

· **TLV (Threshold Limit Value established by ACGIH)**		
1332-58-7	Kaolin	A4
13463-67-7	titanium dioxide	A4
14808-60-7	Quartz (SiO2)	A2
1333-86-4	Carbon black	A4
100-41-4	ethylbenzene	A3

· **MAK (German Maximum Workplace Concentration)**		
13463-67-7	titanium dioxide	3A
14808-60-7	Quartz (SiO2)	1
1333-86-4	Carbon black	3B
100-41-4	ethylbenzene	3A

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**
13463-67-7 titanium dioxide
14808-60-7 Quartz (SiO2)
1333-86-4 Carbon black

· **National regulations:**

· **Water hazard class:** Not determined.
· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

*
16 Other information

Although the information and recommendations set forth in this SDS are presented in good faith and are believed to be correct as of the date of this SDS, Royal Adhesives & Sealants makes no representations as to the completeness or accuracy thereof. Information is supplied on the condition that the persons receiving and using it will make their own determination as to the suitability for their purpose prior to use. In no event will Royal Adhesives & Sealants or any affiliate thereof be responsible for damages of any nature whatsoever resulting from the use or reliance on the information set forth in the SDS.

· **Department issuing SDS:** Environment protection department.
· **Creation Date:** 08/06/2014
· **Date of preparation / last revision** 02/18/2015 / 2
· **Abbreviations and acronyms:**
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

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IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2
Eye Irrit. 2A: Serious eye damage/eye irritation, Hazard Category 2A
Carc. 2: Carcinogenicity, Hazard Category 2

SECTION I: PRODUCT IDENTIFICATION

SPEC MIX, Inc.
1230 Eagan Industrial Rd. Ste 160
Eagan, MN 55121

Emergency Telephone Number (800) 535-5053
Information Telephone Number (888) 773-2649

Revised: Apr-17
SDS SM1

Spec Mix® Product Name	Item #(s)
a. Masonry Cement & Sand Mortar	(MC-01)
b. Masonry Cement & Sand Mortar – Type M	(MC-02)
c. Masonry Cement & Sand Mortar – Type S	(MC-03)
d. Masonry Cement & Sand Mortar – Type N	(MC-04)
e. Masonry Cement & Sand Mortar – Color	(MC-05)
f. Integral Water Repellent Mortar (IWR) – Type M	(IW-01)
g. Integral Water Repellent Mortar (IWR) – Type S	(IW-01)
h. Integral Water Repellent Mortar (IWR) – Type N	(IW-01)
i. Integral Water Repellent Mortar (IWR) – Color	(IW-05)
j. Set Accelerated Mortar – Type M	(SA-01)
k. Set Accelerated Mortar – Type S	(SA-01)
l. Set Accelerated Mortar – Type N	(SA-01)
m. Set Accelerated Mortar – Color	(SA-05)
n. Set Delayed Mortar – Type M	(SD-01)
o. Set Delayed Mortar – Type S	(SD-01)
p. Set Delayed Mortar – Type N	(SD-01)
q. Set Delayed Mortar – Color	(SD-05)

Product Use: Mortars for construction with block, brick, veneer stones, etc.

SECTION II - HAZARD IDENTIFICATION

Hazard-determining components of labeling: Silica, Portland cement
2.1 Classification of the substance or mixture
Carcinogen – Category 1A
Skin Corrosion – Category 1B
Skin Sensitization – Category 1B
Specific Target Organ Toxicity Repeat Exposure – Category 1
Specific Target Organ Toxicity: Single Exposure – Category 3

2.2a Signal word DANGER!

2.2b Hazard Statements
May cause cancer through chronic inhalation
Causes severe skin burns and serious eye damage
May cause an allergic skin reaction
Causes damage to lungs through prolonged or repeated inhalation
May cause respiratory irritation

2.2c Pictograms



2.2d Precautionary statements
Do not handle until all safety precautions have been read and understood.
Wear protective gloves, eye protection, and protective clothing.
Do not eat, drink or smoke when using this product.
Wash thoroughly after handling.
Use in a well-ventilated area.
Do not breathe dust.

If swallowed: Rinse mouth. Do NOT induce vomiting.
If inhaled: Remove person to fresh air and keep comfortable for breathing.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If on skin (or hair): Remove immediately all contaminated clothing and wash before re-use. Rinse skin or hair with water.
If significant skin irritation or rash occurs: get medical advice or attention.
Immediately seek medical advice or attention if symptoms are significant or persist.

Store in a well-ventilated place. Keep container tightly closed.
Dispose of contents/containers in accordance with all regulations.

2.3 Additional Information Precautions must be observed because burns occur with little warning -- little heat is sensed.

2.3a HNOC – Hazards not otherwise classified: Not applicable

2.3b Unknown Acute Toxicity: None
2.3C WHMIS Classification
Class D2B – Skin/Eye Irritant

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Class D2A – Chronic Toxic Effects – Carcinogen
Class E – Corrosive Material

2.3d Label Elements According To WHMIS

Hazard Symbols



Signal Word
DANGER!

SECTION III - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

Hazardous Components	CAS No.	% by Weight
Sand, Silica, Quartz	14808-60-7	40-70*
Portland Cement	65997 15 1	10-30*
Lime	01305-62-0	5-10%
Pulverized Limestone	01317-65-3	5-10%

*The concentrations ranges are provided due to batch-to-batch variability.
None of the constituents of this material are of unknown toxicity.

SECTION IV – FIRST AID MEASURES

4.1 Description of the first-aid measures
General information:
After inhalation: Remove person to fresh air. If breathing is difficult, administer oxygen. If not breathing, give artificial respiration. In case of unconsciousness, place patient stably in side position for transportation.
After skin contact: Wash skin with cool water and pH-neutral soap or a mild detergent. If significant skin irritation or rash occurs: get medical advice or attention.
After eye contact: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
After swallowing: Do not induce vomiting. If conscious, have the victim drink plenty of water and call a physician immediately. Never give anything by mouth to an unconscious person.

4.2 Most important symptoms/effects, acute and delayed
Inhalation: May cause respiratory tract irritation. Causes damage to organs through prolonged or repeated inhalation. This product contains crystalline silica. Prolonged or repeated inhalation of respirable silica from this product can cause silicosis.

Skin contact: Causes skin irritation. Handling can cause dry skin, discomfort, irritation, and dermatitis. May cause sensitization by skin contact. Product becomes extremely alkaline when

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exposed to moisture, and can cause alkali burns and affect the mucous membranes. Precautions must be observed because burns occur with little warning -- little heat is sensed.

Eye Contact: Causes serious eye damage. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva.

Ingestion: May be harmful if swallowed. Ingestion may cause discomfort and/or distress, nausea or vomiting.

4.3 Indication of immediate medical attention and special treatment needed:
Immediately seek medical advice or attention if symptoms are significant or persist.

SECTION V - FIRE FIGHTING MEASURES

5.1 Flammability of the Product: Non-flammable and non-combustible
5.2 Suitable extinguishing agents: Treat for surrounding material
5.3 Special hazards arising from the substance or mixture: None
5.3a Products of Combustion: None
5.3b Explosion Hazards in Presence of Various Substances: Non-explosive in presence of shocks

SECTION VI – ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures: Wear personal protective equipment (See section VIII). Keep unprotected persons away.

6.2 Methods and material for containment and cleaning up:
Do not allow to enter sewers/ surface or ground water. Dispose of unwanted materials and containers properly in accordance with all regulations.

SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND STORAGE

7.1 Handling
Precautions for safe handling: Ensure good ventilation/exhaustion at the workplace. DO NOT BREATHE DUST. In dusty environments, the use of an OSHA, MSHA or NIOSH approved respirator and tight fitting goggles is recommended. Wear appropriate PPE (See section 8). Do not mix with other chemical products, except as indicated by the manufacturer. Do not get in eyes, on skin or clothing. Good housekeeping is important to prevent accumulation of dust.

7.2 Storage
Requirements to be met by storerooms and receptacles: No special requirements.
Information about storage in one common storage facility: Not required.

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Further information about storage conditions: Keep out of the reach of children. Keep container tightly closed and prevent exposure to humidity. Do not allow water to contact the product until time of use to preserve product utility.

SECTION VIII – EXPOSURE CONTROL MEASURES / PERSONAL PROTECTION

8.1 Components with limit values that require monitoring at the workplace:

Hazardous Components	CAS No.	PEL (OSHA) mg/M^3	TLV (ACGIH) mg/M^3
Silica Sand, crystalline	14808-60-7	0.1	0.025 (resp)
Portland Cement	65997-15-1	5 (resp) 15 (total)	10 (resp)
Lime	01305-62-0	5	5
Pulverized Limestone	01317-65-3	5 (resp) 15 (total)	10 (resp)

8.2 Exposure Controls

Use ventilation adequate to keep exposures below recommended exposure limits.

8.3 General protective and hygienic measures

Keep away from foodstuffs, beverages and feed. Immediately remove all soiled and contaminated clothing. Wash hands before breaks and at the end of work. Avoid contact with the eyes and skin.

8.3a Personal protective equipment

Protection of hands:

Wear gloves of adequate length to offer appropriate skin protection from splashes. Nitrile, Butyl and PVC gloves have been found to offer adequate protection for incidental contact. Precautions must be observed because burns occur with little warning -- little heat is sensed.

Eye protection:

Wear approved eye protection (properly fitted dust- or splash-proof chemical safety glasses.

Respiratory protection:

A NIOSH-approved dust mask or filtering face piece is recommended in poorly ventilated areas or when permissible exposure limits may be exceeded. Respirators should be selected by and used under the direction of a trained health and safety professional, following requirements found in OSHA's respirator standard (29 CFR 1910.134) and ANSI's standard for respiratory protection (Z88.2).

SECTION IX - PHYSICAL/CHEMICAL CHARACTERISTICS

General Information

Appearance	Form: Granular Solid
	Color: Gray to gray-brown colored
	Odor: None
pH-value at 20°C (68 °F):	13 (10%)

Boiling point/Boiling range:	Not applicable
Flash point:	Not applicable
Auto igniting:	Product is not self-igniting
Vapor pressure at 21°C (70°F)	Not available
Density at 25°C (77 °F):	2.6 to 3.15
Solubility in / Miscibility with Water:	Insoluble
VOC content:	0 g/L VOC

SECTION X – STABILITY AND REACTIVITY

10.1 Reactivity
No dangerous reaction known under conditions of normal use.
10.2 Chemical stability
Stable under normal storage conditions. Keep in dry storage.
10.3 Possibility of hazardous reaction
No dangerous reaction known under conditions of normal use.
10.4 Thermal decomposition / conditions to be avoided
No decomposition if used according to specifications.
10.5 Incompatible materials
Contact of silica with powerful oxidizing agents such as fluorine, chlorine trifluoride, manganese trioxide, or oxygen difluoride may cause fires
10.6 Hazardous Decomposition or By-products
Silica will dissolve in Hydrofluoric Acid and produce a corrosive gas – silicon tetrafluoride.

SECTION XI – TOXICOLOGICAL INFORMATION

11.1 Exposure Routes: Skin contact, skin adsorption, eye contact, inhalation, or ingestion.

11.2 Symptoms related to physical/chemical/toxicological characteristics:

Inhalation: May cause respiratory tract irritation. Causes damage to organs through prolonged or repeated exposure. This product contains crystalline silica. Prolonged or repeated inhalation of respirable silica from this product can cause silicosis.

Skin contact: Causes skin irritation. Handling can cause dry skin, discomfort, irritation, and dermatitis. May cause sensitization by skin contact. Product becomes extremely alkaline when exposed to moisture, and can cause alkali burns and affect the mucous membranes.

Eye Contact: Causes serious eye damage. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva.

Ingestion: Harmful if swallowed. Ingestion may cause discomfort and/or distress, nausea or vomiting.

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11.3 Delayed, immediate and chronic effects of short-term and long-term exposure

Short Term

Skin Corrosion/Irritation: Causes severe skin burns.

Serious Eye Damage/Irritation: Causes severe eye damage.

Respiratory Sensitization: Not available

Skin Sensitization: May cause an allergic skin reaction.

Specific Target Organ Toxicity-Single Exposure: (Category 1) Causes respiratory irritation.

Aspiration Hazard: Not available

Long Term

Carcinogenicity: May cause cancer through chronic inhalation.

Germ Cell Mutagenicity: Not available

Reproductive Toxicity: Not available

Specific Target Organ Toxicity- Repeated Exposure: (Category 1) Causes damage to lungs through prolonged/repeated exposure

Synergistic/Antagonistic Effects: Not available.

SECTION XII – ECOLOGICAL INFORMATION

12.1 Ecotoxicity

May cause long-term adverse effects to the aquatic environment. Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system. Must not reach bodies of water or drainage ditch undiluted or un-neutralized

12.2 Persistence and degradability

No further relevant information available.

12.3 Bioaccumulative potential:

No further relevant information available.

12.4 Mobility in soil

No further relevant information available.

12.5 Other Adverse Effects

No further relevant information available.

SECTION XIII – DISPOSAL CONSIDERATIONS

13.1 Waste Disposal Method

The packaging and material may be land filled; however, material should be covered to minimize generation of airborne dust. This product is not classified as a hazardous waste under the authority of the RCRA (40CFR 261) or CERCLA (40CFR 117&302). Disposal must be made in accordance with local, state and federal regulations.

SPEC MIX, Inc. 1230 Eagan Industrial Rd. Suite 160, Eagan, MN 55121 T 888.773.2649 F 651.454.5315

13.2 Other disposal considerations

Uncleaned packaging recommendation: Disposal must be made in accordance with local, state and federal regulations.

Recommended cleansing agent: Water, if necessary with cleansing agents.

SECTION XIV – TRANSPORT INFORMATION

	DOT (U.S.)	TDG (Canada)
UN-Number	Not Regulated	Not Regulated
UN proper shipping name	Not Regulated	Not Regulated
Transport Hazard Class(es)	Not Regulated	Not Regulated
Packing Group (if applicable)	Not Regulated	Not Regulated

14.1 Environmental hazards:

Not Available

14.2 Transport in bulk according to Annex II of Marpol 73/78 and the IBC Code

Not available

14.3 Special precautions for user

Do not handle until all safety precautions have been read and understood.

SECTION XV – OTHER REGULATORY INFORMATION

15.1 Safety, Health and Environmental Regulations/Legislations specific for the chemical

Canada

WHMIS Classification: Considered to be a hazardous material under the Hazardous Products Act as defined by the Controlled Products Regulations and subject to the requirements of Health Canada's Workplace Hazardous Material Information (WHMIS). This document complies with the WHMIS requirements of the Hazardous Products Act (HPA) and the CPR.

15.2 US Federal Information

SARA 302/311/312/313 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302, 311, 312 or 313.

RCRA: Crystalline silica (quartz) is not classified as a hazardous waste under the Resource Conservation and Recovery Act, or its regulations, 40 CFR §261 et seq.

CERCLA: Crystalline silica (quartz) is not classified as a hazardous substance under regulations of the Comprehensive Environmental Response Compensation and Liability Act (CERCLA), 40 CFR §302.

Emergency Planning and Community Right to Know Act (SARA Title III): Crystalline silica (quartz) is not an extremely hazardous substance under Section 302 and is not a toxic chemical subject to the requirements of Section 313.

FDA: Silica is included in the list of substances that may be included in coatings used in food contact surfaces, 21 CFR §175.300(b)(3)(xxvi).

NTP: Respirable crystalline silica, primarily quartz dusts occurring in industrial and occupational settings, is classified as Known to be a Human Carcinogen.

OSHA Carcinogen: Crystalline silica (quartz) is not listed.

15.3 State Right to Know Laws

California Prop. 65 Components

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

California Inhalation Reference Exposure Level (REL): California established a chronic REL of 3 µg for silica (crystalline, respirable). A chronic REL is an airborne level of a substance at or below which no adverse health effects are anticipated in individuals indefinitely exposed to the substance at that level.

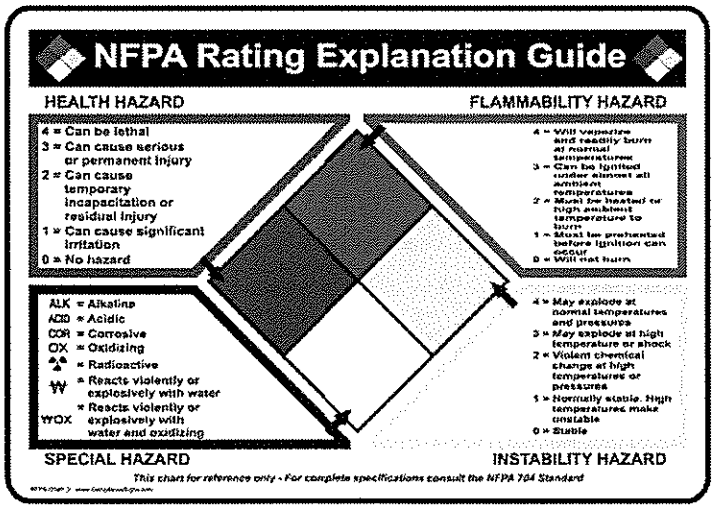
Massachusetts Toxic Use Reduction Act: Silica, crystalline (respirable size, <10 microns) is "toxic" for purposes of the Massachusetts Toxic Use Reduction Act.

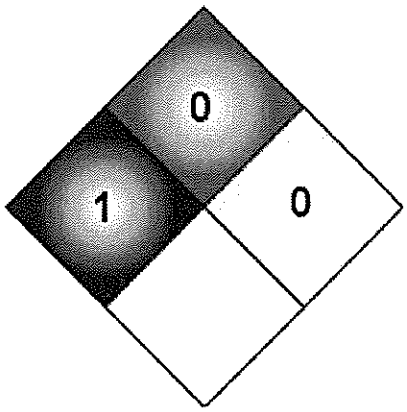
15.4 Global Inventories

DSL All components of this product are on the Canadian DSL list.

TSCA No.: Crystalline silica (quartz) appears on the EPA TSCA inventory under the CAS No. 14808-60-7. All constituents are listed in the TSCA inventory.

15.5 NFPA Ratings





SECTION XVI – OTHER INFORMATION

Last Updated: April 19, 2017

NOTE: The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, express or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by exposure to silica contained in our products.

Prepared by **SPEC MIX, Inc.**
Phone (888) 773-2649
www.SPECMIX.com
End of SDS

SAFETY DATA SHEET

Methyl Acetylene

Section 1. Identification

GHS product identifier : Methyl Acetylene

Chemical name : propyne

Other means of identification : 1-Propyne; Methyl acetylene; Methyl acetylene (Propyne)

Product use : Synthetic/Analytical chemistry.

Synonym : 1-Propyne; Methyl acetylene; Methyl acetylene (Propyne)

SDS # : 001094

Supplier's details : Airgas USA, LLC and its affiliates
259 North Radnor-Chester Road
Suite 100
Radnor, PA 19087-5283
1-610-687-5253

Emergency telephone number (with hours of operation) : 1-866-734-3438

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : FLAMMABLE GASES - Category 1
GASES UNDER PRESSURE - Liquefied gas

GHS label elements

Hazard pictograms :



Signal word : Danger

Hazard statements : Extremely flammable gas.
May form explosive mixtures with air.
Contains gas under pressure; may explode if heated.
May cause frostbite.
May displace oxygen and cause rapid suffocation.

Precautionary statements

General : Read and follow all Safety Data Sheets (SDS'S) before use. Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand. Close valve after each use and when empty. Use equipment rated for cylinder pressure. Do not open valve until connected to equipment prepared for use. Use a back flow preventative device in the piping. Use only equipment of compatible materials of construction. Always keep container in upright position. Approach suspected leak area with caution.

Prevention : Never Put cylinders into unventilated areas of passenger vehicles. Keep away from heat, sparks, open flames and hot surfaces. - No smoking.

Response : Leaking gas fire: Do not extinguish, unless leak can be stopped safely. Eliminate all ignition sources if safe to do so.

Storage : Protect from sunlight. Protect from sunlight when ambient temperature exceeds 52°C/125°F. Store in a well-ventilated place.

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Section 2. Hazards identification

Disposal : Not applicable.

Hazards not otherwise classified : Liquid can cause burns similar to frostbite.

Section 3. Composition/information on ingredients

Substance/mixture : Substance

Chemical name : propyne

Other means of identification : 1-Propyne; Methyl acetylene; Methyl acetylene (Propyne)

CAS number/other identifiers

CAS number : 74-99-7

Product code : 001094

Ingredient name	%	CAS number
1-Propyne	100	74-99-7

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Skin contact : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. To avoid the risk of static discharges and gas ignition, soak contaminated clothing thoroughly with water before removing it. Get medical attention if symptoms occur. In case of contact with liquid, warm frozen tissues slowly with lukewarm water and get medical attention. Do not rub affected area. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if adverse health effects persist or are severe. Ingestion of liquid can cause burns similar to frostbite. If frostbite occurs, get medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. As this product rapidly becomes a gas when released, refer to the inhalation section.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Liquid can cause burns similar to frostbite.

Inhalation : No known significant effects or critical hazards.

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Section 4. First aid measures

Skin contact : Dermal contact with rapidly evaporating liquid could result in freezing of the tissues or frostbite.

Frostbite : Try to warm up the frozen tissues and seek medical attention.

Ingestion : Ingestion of liquid can cause burns similar to frostbite.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
frostbite

Inhalation : No specific data.

Skin contact : Adverse symptoms may include the following:
frostbite

Ingestion : Adverse symptoms may include the following:
frostbite

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : Contains gas under pressure. Extremely flammable gas. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapor/gas is heavier than air and will spread along the ground. Gas may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back, causing fire or explosion.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Contact supplier immediately for specialist advice. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. If involved in fire, shut off flow immediately if it can be done without risk. If this is impossible, withdraw from area and allow fire to burn. Fight fire from protected location or maximum possible distance. Eliminate all ignition sources if safe to do so.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. For incidents involving large quantities, thermally insulated undergarments and thick textile or leather gloves should be worn.

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Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : Accidental releases pose a serious fire or explosion hazard. No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing gas. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Ensure emergency procedures to deal with accidental gas releases are in place to avoid contamination of the environment. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill : Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment.

Large spill : Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Contains gas under pressure. Do not get in eyes or on skin or clothing. Avoid breathing gas. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Empty containers retain product residue and can be hazardous. Do not puncture or incinerate container. Use equipment rated for cylinder pressure. Close valve after each use and when empty. Protect cylinders from physical damage; do not drag, roll, slide, or drop. Use a suitable hand truck for cylinder movement.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in a segregated and approved area. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Eliminate all ignition sources. Keep container tightly closed and sealed until ready for use. Cylinders should be stored upright, with valve protection cap in place, and firmly secured to prevent falling or being knocked over. Cylinder temperatures should not exceed 52 °C (125 °F).

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Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
1-Propyne	**ACGIH TLV (United States, 3/2012).** TWA: 1640 mg/m³ 8 hours. TWA: 1000 ppm 8 hours. **NIOSH REL (United States, 1/2013).** TWA: 1650 mg/m³ 10 hours. TWA: 1000 ppm 10 hours. **OSHA PEL (United States, 6/2010).** TWA: 1650 mg/m³ 8 hours. TWA: 1000 ppm 8 hours. **OSHA PEL 1989 (United States, 3/1989).** TWA: 1650 mg/m³ 8 hours. TWA: 1000 ppm 8 hours.

Appropriate engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. If contact with the liquid is possible, insulated gloves suitable for low temperatures should be worn. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.

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Section 8. Exposure controls/personal protection

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

Appearance

Physical state : Gas. [Liquefied gas]

Color : Colorless.

Molecular weight : 40.07 g/mole

Molecular formula : C3-H4

Boiling/condensation point : -23.2°C (-9.8°F)

Melting/freezing point : -102.7°C (-152.9°F)

Critical temperature : 129.2°C (264.6°F)

Odor : Characteristic.

Odor threshold : Not available.

pH : Not available.

Flash point : Not available.

Burning time : Not applicable.

Burning rate : Not applicable.

Evaporation rate : 387.6 (butyl acetate = 1)

Flammability (solid, gas) : Not available.

Lower and upper explosive (flammable) limits : Lower: 2.4%
Upper: 11.7%

Vapor pressure : 60 (psig)

Vapor density : 1.4 (Air = 1)

Specific Volume (ft^3/lb) : 9.5238

Gas Density (lb/ft^3) : 0.105

Relative density : Not applicable.

Solubility : Not available.

Solubility in water : 3.6 g/l

Partition coefficient: n-octanol/water : 0.94

Auto-ignition temperature : 453.85°C (848.9°F)

Decomposition temperature : Not available.

SADT : Not available.

Viscosity : Not applicable.

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Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow gas to accumulate in low or confined areas.

Incompatibility with various substances : Highly reactive or incompatible with the following materials: oxidizing materials.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Hazardous polymerization : Under normal conditions of storage and use, hazardous polymerization will not occur.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Not available.

Irritation/Corrosion

Not available.

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

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Section 11. Toxicological information

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Liquid can cause burns similar to frostbite.

Inhalation : No known significant effects or critical hazards.

Skin contact : Dermal contact with rapidly evaporating liquid could result in freezing of the tissues or frostbite.

Ingestion : Ingestion of liquid can cause burns similar to frostbite.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:
frostbite

Inhalation : No specific data.

Skin contact : Adverse symptoms may include the following:
frostbite

Ingestion : Adverse symptoms may include the following:
frostbite

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Not available.

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Section 12. Ecological information

Toxicity

Not available.

Persistence and degradability

Not available.

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
1-Propyne	0.94	-	low

Mobility in soil

Soil/water partition coefficient (K_{OC}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Empty Airgas-owned pressure vessels should be returned to Airgas. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Do not puncture or incinerate container.

Section 14. Transport information

	DOT	TDG	Mexico	IMDG	IATA
UN number	UN3161	UN3161	UN3161	UN3161	UN3161
UN proper shipping name	Liquefied gas, flammable n.o.s. (Methyl Acetylene)	Liquefied gas, flammable n.o.s. (Methyl Acetylene)	Liquefied gas, flammable n.o.s. (Methyl Acetylene)	Liquefied gas, flammable n.o.s. (Methyl Acetylene)	Liquefied gas, flammable n.o.s. (Methyl Acetylene)
Transport hazard class(es)	2.1 	2.1 	2.1 	2.1 	2.1 
Packing group	-	-	-	-	-
Environment	No.	No.	No.	No.	No.

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Section 14. Transport information

Additional information	-	**Explosive Limit and Limited Quantity Index** 0.125 **ERAP Index** 3000 **Passenger Carrying Ship Index** Forbidden **Passenger Carrying Road or Rail Index** Forbidden	-	-	-

"Refer to CFR 49 (or authority having jurisdiction) to determine the information required for shipment of the product."

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not available.

Section 15. Regulatory information

U.S. Federal regulations : **TSCA 8(a) CDR Exempt/Partial exemption**: Not determined

United States inventory (TSCA 8b): This material is listed or exempted.

Clean Air Act (CAA) 112 regulated flammable substances: propyne

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Not listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Fire hazard
Sudden release of pressure

Composition/information on ingredients

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Section 15. Regulatory information

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
1-Propyne	100	Yes.	Yes.	No.	No.	No.

State regulations

Massachusetts : This material is listed.

New York : This material is not listed.

New Jersey : This material is listed.

Pennsylvania : This material is listed.

Canada inventory : This material is listed or exempted.

International regulations

International lists : **Australia inventory (AICS)**: This material is listed or exempted.
China inventory (IECSC): Not determined.
Japan inventory: This material is listed or exempted.
Korea inventory: This material is listed or exempted.
Malaysia Inventory (EHS Register): Not determined.
New Zealand Inventory of Chemicals (NZIoC): This material is listed or exempted.
Philippines inventory (PICCS): This material is listed or exempted.
Taiwan inventory (CSNN): Not determined.

Chemical Weapons Convention List Schedule I Chemicals : Not listed

Chemical Weapons Convention List Schedule II Chemicals : Not listed

Chemical Weapons Convention List Schedule III Chemicals : Not listed

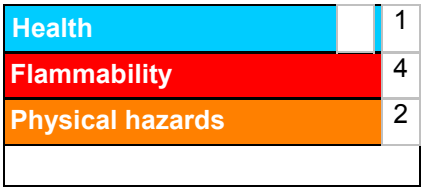
Canada

WHMIS (Canada) : Class A: Compressed gas.
Class B-1: Flammable gas.
CEPA Toxic substances: This material is not listed.
Canadian ARET: This material is not listed.
Canadian NPRI: This material is not listed.
Alberta Designated Substances: This material is not listed.
Ontario Designated Substances: This material is not listed.
Quebec Designated Substances: This material is not listed.

Section 16. Other information

Canada Label requirements : Class A: Compressed gas.
Class B-1: Flammable gas.

Hazardous Material Information System (U.S.A.)



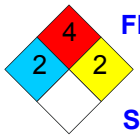
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Section 16. Other information

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on SDSs under 29 CFR 1910. 1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.)



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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

History

Date of printing	:	5/20/2015.
Date of issue/Date of revision	:	5/20/2015.
Date of previous issue	:	10/22/2014.
Version	:	0.02
Key to abbreviations	:	ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor GHS = Globally Harmonized System of Classification and Labelling of Chemicals IATA = International Air Transport Association IBC = Intermediate Bulk Container IMDG = International Maritime Dangerous Goods LogPow = logarithm of the octanol/water partition coefficient MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution) UN = United NationsACGIH – American Conference of Governmental Industrial Hygienists AIHA – American Industrial Hygiene Association CAS – Chemical Abstract Services CEPA – Canadian Environmental Protection Act CERCLA – Comprehensive Environmental Response, Compensation, and Liability Act (EPA) CFR – United States Code of Federal Regulations CPR – Controlled Products Regulations DSL – Domestic Substances List GWP – Global Warming Potential IARC – International Agency for Research on Cancer ICAO – International Civil Aviation Organisation Inh – Inhalation LC – Lethal concentration LD – Lethal dosage NDSL – Non-Domestic Substances List NIOSH – National Institute for Occupational Safety and Health

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Section 16. Other information

TDG – Canadian Transportation of Dangerous Goods Act and Regulations
TLV – Threshold Limit Value
TSCA – Toxic Substances Control Act
WEEL – Workplace Environmental Exposure Level
WHMIS – Canadian Workplace Hazardous Material Information System

References : Not available.

Indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

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SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: MILLENNIUM ARC® 7018
Product Size: 1/8" (3.2 mm)

Other means of identification
SDS number: 200000001620

Recommended use and restriction on use
Recommended use: SMAW (Shielded Metal Arc Welding)
Restrictions on use: Not known. Read this SDS before using this product.

Manufacturer/Importer/Supplier/Distributor Information

Company Name:	The Lincoln Electric Company
Address:	22801 Saint Clair Avenue Cleveland, Ohio 44117
Telephone:	+1 (216) 481-8100
Contact Person:	Safety Data Sheet Questions: www.lincolnelectric.com/sds Arc Welding Safety Information: www.lincolnelectric.com/safety
Company Name:	The Lincoln Electric Company of Canada LP
Address:	179 Wicksteed Avenue Toronto, Ontario M4G 2B9
Telephone:	+1 (416) 421-2600
Contact Person:	Safety Data Sheet Questions: www.lincolnelectric.com/sds Arc Welding Safety Information: www.lincolnelectric.com/safety

Emergency telephone number:

USA/Canada/Mexico	+1 (888) 609-1762
Americas/Europe	+1 (216) 383-8962
Asia Pacific	+1 (216) 383-8966
Middle East/Africa	+1 (216) 383-8969

3E Company Access Code: 333988

2. HAZARDS IDENTIFICATION

Classified according to the criteria of the Globally Harmonized System of Classification and Labeling of Chemicals (GHS), The United States Occupational Safety and Health Administration's Hazard Communication Standard (29 CFR 1910.1200), Canada's Hazardous Product Regulations and Mexico's Harmonized System for the Identification and Communication of Hazards and Risks from Hazardous Chemicals in the Workplace.

Hazard Classification Not classified as hazardous according to applicable GHS hazard classification criteria.

Label Elements

Hazard Symbol: No symbol

Signal Word: No signal word.

Hazard Statement: Not applicable

Precautionary Statements: Not applicable

Other hazards which do not result in GHS classification:

Electrical Shock can kill. If welding must be performed in damp locations or with wet clothing, on metal structures or when in cramped positions such as sitting, kneeling or lying, or if there is a high risk of unavoidable or accidental contact with work piece, use the following equipment: Semiautomatic DC Welder, DC Manual (Stick) Welder, or AC Welder with Reduced Voltage Control.

Arc rays can injure eyes and burn skin. Welding arc and sparks can ignite combustibles and flammable materials. Overexposure to welding fumes and gases can be hazardous. Read and understand the manufacturer's instructions, Safety Data Sheets and the precautionary labels before using this product. Refer to Section 8.

Substance(s) formed under the conditions of use:

The welding fume produced from this welding electrode may contain the following constituent(s) and/or their complex metallic oxides as well as solid particles or other constituents from the consumables, base metal, or base metal coating not listed below.

Chemical Identity	CAS-No.
Carbon dioxide	124-38-9
Carbon monoxide	630-08-0
Nitrogen dioxide	10102-44-0
Ozone	10028-15-6
Manganese	7439-96-5

3. COMPOSITION / INFORMATION ON INGREDIENTS

Reportable Hazardous Ingredients
Mixtures

Chemical Identity	CAS number	Content in percent (%)*
Iron	7439-89-6	50 - <100%
Limestone	1317-65-3	5 - <10%
Fluorides (as F)	16984-48-8	1 - <5%
Titanium dioxide	13463-67-7	1 - <5%
Feldspar	68476-25-5	1 - <5%
Sodium silicate	1344-09-8	1 - <5%
Manganese	7439-96-5	1 - <5%
Silicon	7440-21-3	0.1 - <1%
Potassium silicate	1312-76-1	0.1 - <1%
Quartz	14808-60-7	0.1 - <1%
Hydroxyethyl cellulose	9004-62-0	0.1 - <1%
Carboxymethyl cellulose, sodium salt	9004-32-4	0.1 - <1%

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

Composition Comments:

The term "Hazardous Ingredients" should be interpreted as a term defined in Hazard Communication standards and does not necessarily imply the existence of a welding hazard. The product may contain additional non-hazardous ingredients or may form additional compounds under the condition of use. Refer to Sections 2 and 8 for more information.

4. FIRST AID MEASURES

Ingestion:	Unlikely due to form of product, except for granular materials. Avoid hand, clothing, food, and drink contact with metal fume or powder which can cause ingestion of particulate during hand to mouth activities such as drinking, eating, smoking, etc. If ingested, do not induce vomiting. Contact a poison control center. Unless the poison control center advises otherwise, wash out mouth thoroughly with water. If symptoms develop, seek medical attention at once.
Inhalation:	Move to fresh air if breathing is difficult. If breathing has stopped, perform artificial respiration and obtain medical assistance at once.
Skin Contact:	Remove contaminated clothing and wash the skin thoroughly with soap and water. For reddened or blistered skin, or thermal burns, obtain medical assistance at once.
Eye contact:	Dust or fume from this product should be flushed from the eyes with copious amounts of clean, tepid water until transported to an emergency medical facility. Do not allow victim to rub or keep eyes tightly closed. Obtain medical assistance at once. Arc rays can injure eyes. If exposed to arc rays, move victim to dark room, remove contact lenses as necessary for treatment, cover eyes with a padded dressing and rest. Obtain medical assistance if symptoms persist.

Most important symptoms/effects, acute and delayed

Symptoms:	Short-term (acute) overexposure to fumes and gases from welding and allied processes may result in discomfort such as metal fume fever, dizziness, nausea, or dryness or irritation of nose, throat, or eyes. May aggravate pre-existing respiratory problems (e.g. asthma, emphysema). Long-term (chronic) overexposure to fumes and gases from welding and allied processes can lead to siderosis (iron deposits in lung), central nervous system effects, bronchitis and other pulmonary effects. Refer to Section 11 for more information.
Hazards:	Welding and allied process hazards are complex and may include physical and health hazards such as but not limited to electric shock, physical strains, radiation burns (eye flash), thermal burns due to hot metal or spatter and potential health effects of overexposure to welding fume or dust. Refer to Section 11 for more information.

Indication of immediate medical attention and special treatment needed

Treatment:	Treat symptomatically.

5. FIRE-FIGHTING MEASURES

General Fire Hazards:	As shipped, this product is nonflammable. However, welding arc and sparks can ignite combustibles and flammable products. Read and understand American National Standard Z49.1, "Safety In Welding, Cutting and Allied Processes" and National Fire Protection Association NFPA 51B, "Standard for Fire Prevention During Welding, Cutting and Other Hot Work" before using this product.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media:	As shipped, the product will not burn. In case of fire in the surroundings: use appropriate extinguishing agent.
Unsuitable extinguishing	Do not use water jet as an extinguisher, as this will spread the fire.

media:

Specific hazards arising from the chemical: Welding arc and sparks can ignite combustibles and flammable products.

Special protective equipment and precautions for firefighters

Special fire fighting procedures: Use standard firefighting procedures and consider the hazards of other involved materials.

Special protective equipment for fire-fighters: Selection of respiratory protection for fire fighting: follow the general fire precautions indicated in the workplace. Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: If airborne dust and/or fume is present, use adequate engineering controls and, if needed, personal protection to prevent overexposure. Refer to recommendations in Section 8.

Methods and material for containment and cleaning up: Absorb with sand or other inert absorbent. Stop the flow of material, if this is without risk. Clean up spills immediately, observing precautions in the personal protective equipment in Section 8. Avoid generating dust. Prevent product from entering any drains, sewers or water sources. Refer to Section 13 for proper disposal.

Environmental Precautions: Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Do not contaminate water sources or sewer. Environmental manager must be informed of all major spillages.

7. HANDLING AND STORAGE

Precautions for safe handling: Prevent formation of dust. Provide appropriate exhaust ventilation at places where dust is formed.

Read and understand the manufacturer's instruction and the precautionary label on the product. Refer to Lincoln Safety Publications at www.lincolnelectric.com/safety. See American National Standard Z49.1, "Safety In Welding, Cutting and Allied Processes" published by the American Welding Society, http://pubs.aws.org and OSHA Publication 2206 (29CFR1910), U.S. Government Printing Office, www.gpo.gov.

Conditions for safe storage, including any incompatibilities: Store in closed original container in a dry place. Store in accordance with local/regional/national regulations. Store away from incompatible materials.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control Parameters

Occupational Exposure Limits: US

Chemical Identity	Type	Exposure Limit Values	Source
Limestone - Total dust.	PEL	15 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
Limestone - Respirable fraction.	PEL	5 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
Limestone - Respirable.	REL	5 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2005)

Limestone - Total	REL	10 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2005)
Fluorides (as F) - as F	TWA	2.5 mg/m3	US. ACGIH Threshold Limit Values (12 2010)
	PEL	2.5 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
Fluorides (as F) - Dust.	TWA	2.5 mg/m3	US. OSHA Table Z-2 (29 CFR 1910.1000) (02 2006)
Titanium dioxide	TWA	10 mg/m3	US. ACGIH Threshold Limit Values (12 2010)
Titanium dioxide - Total dust.	PEL	15 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
Manganese - Fume. - as Mn	Ceiling	5 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
	REL	1 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2005)
	STEL	3 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2005)
Manganese - Inhalable fraction. - as Mn	TWA	0.1 mg/m3	US. ACGIH Threshold Limit Values (03 2014)
Manganese - Respirable fraction. - as Mn	TWA	0.02 mg/m3	US. ACGIH Threshold Limit Values (03 2014)
Silicon - Total dust.	PEL	15 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
Silicon - Respirable fraction.	PEL	5 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
Silicon - Respirable.	REL	5 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2005)
Silicon - Total	REL	10 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2005)
Quartz - Respirable fraction.	TWA	0.025 mg/m3	US. ACGIH Threshold Limit Values (12 2010)
Quartz - Respirable.	TWA	2.4 millions of particles per cubic foot of air	US. OSHA Table Z-3 (29 CFR 1910.1000) (2000)
	TWA	0.1 mg/m3	US. OSHA Table Z-3 (29 CFR 1910.1000) (2000)
Quartz - Respirable dust.	REL	0.05 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2005)
Quartz - Respirable dust.	TWA	0.05 mg/m3	US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050) (03 2016)
	OSHA_ACT	0.025 mg/m3	US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050) (03 2016)
Quartz - Respirable dust.	PEL	0.05 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (03 2016)

Occupational Exposure Limits: CANADA

Chemical Identity	Type	Exposure Limit Values	Source
Limestone	TWA	10 mg/m3	Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2) (07 2009)
Limestone - Total dust.	STEL	20 mg/m3	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
	TWA	10 mg/m3	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)

Limestone - Respirable fraction.	TWA	3 mg/m3	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Limestone	8 HR ACL	10 mg/m3	Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21) (05 2009)
	15 MIN ACL	20 mg/m3	Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21) (05 2009)
Limestone - Total dust.	TWA	10 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (12 2008)
Fluorides (as F) - as F	TWA	2.5 mg/m3	Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2) (07 2009)
	TWA	2.5 mg/m3	Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2) (07 2009)
	TWA	2.5 mg/m3	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
	TWA	2.5 mg/m3	Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act) (03 2011)
	TWA	2.5 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010)
	8 HR ACL	2.5 mg/m3	Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21) (05 2009)
	15 MIN ACL	5 mg/m3	Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21) (05 2009)
	TWA	2.5 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (12 2008)
Titanium dioxide	TWA	10 mg/m3	Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2) (07 2009)
Titanium dioxide - Total dust.	TWA	10 mg/m3	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Titanium dioxide - Respirable fraction.	TWA	3 mg/m3	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Titanium dioxide	TWA	10 mg/m3	Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act) (03 2011)
	TWA	10 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010)
	8 HR ACL	10 mg/m3	Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21) (05 2009)
	15 MIN ACL	20 mg/m3	Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21) (05 2009)
Titanium dioxide - Total dust.	TWA	10 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (12 2008)
Manganese - as Mn	TWA	0.2 mg/m3	Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2) (07 2009)

	TWA	0.2 mg/m3	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
	8 HR ACL	0.2 mg/m3	Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21) (05 2009)
	15 MIN ACL	0.6 mg/m3	Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21) (05 2009)
Manganese - Fume. - as Mn	TWA	1 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (12 2008)
Manganese - Dust. - as Mn	TWA	5 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (12 2008)
Manganese - Fume. - as Mn	STEL	3 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (12 2008)
Manganese - Respirable fraction. - as Mn	TWA	0.02 mg/m3	Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act) (03 2014)
Manganese - Inhalable fraction. - as Mn	TWA	0.1 mg/m3	Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act) (03 2014)
Manganese - as Mn	TWA	0.2 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (06 2015)
Silicon - Total dust.	TWA	10 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (07 2010)
Silicon	8 HR ACL	10 mg/m3	Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21) (05 2009)
	15 MIN ACL	20 mg/m3	Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21) (05 2009)
Silicon - Total dust.	TWA	10 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (12 2008)
Quartz - Respirable particles.	TWA	0.025 mg/m3	Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2) (07 2009)
Quartz - Respirable fraction.	TWA	0.025 mg/m3	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
	TWA	0.025 mg/m3	Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act) (03 2011)
	8 HR ACL	0.05 mg/m3	Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21) (05 2009)
Quartz - Respirable dust.	TWA	0.1 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (12 2008)
Quartz - Respirable fraction.	TWA	0.10 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (06 2015)

Occupational Exposure Limits: MEXICO

Chemical Identity	Type	Exposure Limit Values	Source
Limestone	VLE-CT	20 mg/m3	Mexico. OELs. (NOM-010-STPS-2014 Chemical Pollutants at the Workplace; Assessment and Control) (03 2000)
	VLE-PPT	10 mg/m3	Mexico. OELs. (NOM-010-STPS-2014 Chemical Pollutants at the Workplace;

			Assessment and Control) (03 2000)
Fluorides (as F) - as F	VLE-PPT	2.5 mg/m3	Mexico. OELs. (NOM-010-STPS-2014 Chemical Pollutants at the Workplace; Assessment and Control) (03 2000)
Titanium dioxide - as Ti	VLE-CT	20 mg/m3	Mexico. OELs. (NOM-010-STPS-2014 Chemical Pollutants at the Workplace; Assessment and Control) (03 2000)
	VLE-PPT	10 mg/m3	Mexico. OELs. (NOM-010-STPS-2014 Chemical Pollutants at the Workplace; Assessment and Control) (03 2000)
Manganese - as Mn	VLE-PPT	0.2 mg/m3	Mexico. OELs. (NOM-010-STPS-2014 Chemical Pollutants at the Workplace; Assessment and Control) (03 2000)
Manganese - Fume. - as Mn	VLE-PPT	1 mg/m3	Mexico. OELs. (NOM-010-STPS-2014 Chemical Pollutants at the Workplace; Assessment and Control) (03 2000)
	VLE-CT	3 mg/m3	Mexico. OELs. (NOM-010-STPS-2014 Chemical Pollutants at the Workplace; Assessment and Control) (03 2000)
Silicon	VLE-PPT	10 mg/m3	Mexico. OELs. (NOM-010-STPS-2014 Chemical Pollutants at the Workplace; Assessment and Control) (03 2000)
	VLE-CT	20 mg/m3	Mexico. OELs. (NOM-010-STPS-2014 Chemical Pollutants at the Workplace; Assessment and Control) (03 2000)
Quartz	VLE-PPT	0.1 mg/m3	Mexico. OELs. (NOM-010-STPS-2014 Chemical Pollutants at the Workplace; Assessment and Control) (03 2000)

Biological Limit Values: US

Chemical Identity	Exposure Limit Values	Source
Fluorides (as F) (Fluoride: Sampling time: Prior to shift.)	2 mg/l (Urine)	ACGIH BEI (03 2013)
Fluorides (as F) (Fluoride: Sampling time: End of shift.)	3 mg/l (Urine)	ACGIH BEI (03 2013)

Biological Limit Values: MEXICO

Chemical Identity	Exposure Limit Values	Source
Fluorides (as F) (fluorides: Sampling time: Prior to shift.)	3 mg/g (Creatinine in urine)	MX IBE (06 2012)
Fluorides (as F) (fluorides: Sampling time: End of shift.)	10 mg/g (Creatinine in urine)	MX IBE (06 2012)

Additional exposure limits under the conditions of use: US

Chemical Identity	Type	Exposure Limit Values		Source
Carbon dioxide	TWA	5,000 ppm		US. ACGIH Threshold Limit Values (12 2010)
	STEL	30,000 ppm		US. ACGIH Threshold Limit Values (12 2010)
	PEL	5,000 ppm	9,000 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
	STEL	30,000 ppm	54,000 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2005)
	REL	5,000 ppm	9,000 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2005)
Carbon monoxide	TWA	25 ppm		US. ACGIH Threshold Limit Values (12 2010)
	PEL	50 ppm	55 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
	REL	35 ppm	40 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2005)
	Ceil_Time	200 ppm	229 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2005)

Nitrogen dioxide	TWA	0.2 ppm		US. ACGIH Threshold Limit Values (02 2012)
	Ceiling	5 ppm	9 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
	STEL	1 ppm	1.8 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2005)
Ozone	PEL	0.1 ppm	0.2 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
	Ceil_Time	0.1 ppm	0.2 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2005)
	TWA	0.05 ppm		US. ACGIH Threshold Limit Values (03 2014)
	TWA	0.20 ppm		US. ACGIH Threshold Limit Values (03 2014)
	TWA	0.10 ppm		US. ACGIH Threshold Limit Values (03 2014)
	TWA	0.08 ppm		US. ACGIH Threshold Limit Values (03 2014)
Manganese - Fume. - as Mn	Ceiling		5 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
	REL		1 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2005)
	STEL		3 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2005)
Manganese - Inhalable fraction. - as Mn	TWA		0.1 mg/m3	US. ACGIH Threshold Limit Values (03 2014)
Manganese - Respirable fraction. - as Mn	TWA		0.02 mg/m3	US. ACGIH Threshold Limit Values (03 2014)

Additional exposure limits under the conditions of use: CANADA

Chemical Identity	Type	Exposure Limit Values		Source
Carbon dioxide	STEL	30,000 ppm	54,000 mg/m3	Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2) (07 2009)
	TWA	5,000 ppm	9,000 mg/m3	Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2) (07 2009)
	TWA	5,000 ppm		Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
	STEL	15,000 ppm		Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
	TWA	5,000 ppm		Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act) (03 2011)
	STEL	30,000 ppm		Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act) (03 2011)
	STEL	30,000 ppm		Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010)
	TWA	5,000 ppm		Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010)
	8 HR ACL	5,000 ppm		Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21) (05 2009)
	15 MIN ACL	30,000 ppm		Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21) (05 2009)
	TWA	5,000 ppm	9,000 mg/m3	Canada. Quebec OELs. (Ministry of Labor

				- Regulation Respecting the Quality of the Work Environment) (12 2008)
	STEL	30,000 ppm	54,000 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (12 2008)
Carbon monoxide	TWA	25 ppm	29 mg/m3	Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2) (07 2009)
	TWA	25 ppm		Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
	STEL	100 ppm		Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
	TWA	25 ppm		Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act) (03 2011)
	TWA	25 ppm		Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (07 2010)
	8 HR ACL	25 ppm		Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21) (05 2009)
	15 MIN ACL	190 ppm		Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21) (05 2009)
	TWA	35 ppm	40 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (12 2008)
	STEL	200 ppm	230 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (12 2008)
Nitrogen dioxide	STEL	5 ppm	9.4 mg/m3	Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2) (07 2009)
	TWA	3 ppm	5.6 mg/m3	Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2) (07 2009)
	CEILING	1 ppm		Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
	TWA	0.2 ppm		Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act) (03 2012)
	STEL	5 ppm		Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010)
	TWA	3 ppm		Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010)
	8 HR ACL	3 ppm		Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21) (05 2009)
	15 MIN ACL	5 ppm		Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21) (05 2009)
	TWA	3 ppm	5.6 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (12 2008)
Ozone	STEL	0.3 ppm	0.6 mg/m3	Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2) (07 2009)
	TWA	0.1 ppm	0.2 mg/m3	Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2) (07 2009)

	TWA	0.05 ppm		Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
	TWA	0.1 ppm		Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
	TWA	0.08 ppm		Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
	TWA	0.2 ppm		Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
	TWA	0.1 ppm	0.2 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (07 2010)
	STEL	0.3 ppm	0.6 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (07 2010)
	15 MIN ACL	0.15 ppm		Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21) (05 2009)
	8 HR ACL	0.05 ppm		Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21) (05 2009)
	CEILING	0.1 ppm	0.2 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (12 2008)
	TWA	0.20 ppm		Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act) (03 2014)
	TWA	0.05 ppm		Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act) (03 2014)
	TWA	0.08 ppm		Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act) (03 2014)
	TWA	0.10 ppm		Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act) (03 2014)
Manganese - as Mn	TWA		0.2 mg/m3	Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2) (07 2009)
	TWA		0.2 mg/m3	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
	8 HR ACL		0.2 mg/m3	Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21) (05 2009)
	15 MIN ACL		0.6 mg/m3	Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21) (05 2009)
Manganese - Fume. - as Mn	TWA		1 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (12 2008)
Manganese - Dust. - as Mn	TWA		5 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (12 2008)
Manganese - Fume. - as Mn	STEL		3 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (12 2008)
Manganese - Respirable	TWA		0.02 mg/m3	Canada. Manitoba OELs (Reg. 217/2006,

fraction. - as Mn			The Workplace Safety And Health Act) (03 2014)
Manganese - Inhalable fraction. - as Mn	TWA	0.1 mg/m3	Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act) (03 2014)
Manganese - as Mn	TWA	0.2 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (06 2015)

Additional exposure limits under the conditions of use: MEXICO

Chemical Identity	Type	Exposure Limit Values		Source
Carbon dioxide	VLE-PPT	5,000 ppm	9,000 mg/m3	Mexico. OELs. (NOM-010-STPS-2014 Chemical Pollutants at the Workplace; Assessment and Control) (03 2000)
	VLE-CT	15,000 ppm	27,000 mg/m3	Mexico. OELs. (NOM-010-STPS-2014 Chemical Pollutants at the Workplace; Assessment and Control) (03 2000)
Carbon monoxide	VLE-CT	400 ppm	400 mg/m3	Mexico. OELs. (NOM-010-STPS-2014 Chemical Pollutants at the Workplace; Assessment and Control) (03 2000)
	VLE-PPT	50 ppm	55 mg/m3	Mexico. OELs. (NOM-010-STPS-2014 Chemical Pollutants at the Workplace; Assessment and Control) (03 2000)
Nitrogen dioxide	VLE-CT	5 ppm	10 mg/m3	Mexico. OELs. (NOM-010-STPS-2014 Chemical Pollutants at the Workplace; Assessment and Control) (03 2000)
	VLE-PPT	3 ppm	6 mg/m3	Mexico. OELs. (NOM-010-STPS-2014 Chemical Pollutants at the Workplace; Assessment and Control) (03 2000)
Ozone	VLE-P	0.1 ppm	0.2 mg/m3	Mexico. OELs. (NOM-010-STPS-2014 Chemical Pollutants at the Workplace; Assessment and Control) (03 2000)
Manganese - as Mn	VLE-PPT		0.2 mg/m3	Mexico. OELs. (NOM-010-STPS-2014 Chemical Pollutants at the Workplace; Assessment and Control) (03 2000)
Manganese - Fume. - as Mn	VLE-PPT		1 mg/m3	Mexico. OELs. (NOM-010-STPS-2014 Chemical Pollutants at the Workplace; Assessment and Control) (03 2000)
	VLE-CT		3 mg/m3	Mexico. OELs. (NOM-010-STPS-2014 Chemical Pollutants at the Workplace; Assessment and Control) (03 2000)

Appropriate Engineering Controls

Ventilation: Use enough ventilation, local exhaust at the arc, or both to keep the fumes and gases from the worker's breathing zone and the general area. Train the welder to keep his head out of the fumes. **Keep exposure as low as possible.**

Individual protection measures, such as personal protective equipment

General information:

Exposure Guidelines: Threshold Limit Values (TLVs) and Biological Exposure Indices (BEIs) are values published by the American Conference of Government Industrial Hygienists (ACGIH). ACGIH Statement of Positions Regarding the TLVs® and BEIs® states that the TLV-TWA should be used as a guide in the control of health hazards and should not be used to indicate a fine line between safe and dangerous exposures. See Section 10 for information on potential fume constituents of health interest. Threshold Limit Values are figures published by the American Conference of Government Industrial Hygienists.

Maximum Fume Exposure Guideline™ (MFEG)™ for this product (based on content of Manganese) is 0.4 mg/m3. This exposure guideline is calculated using the most conservative value of the ACGIH TLV or OSHA PEL for the stated substance. If your local applicable exposure limits are lower than the ACGIH TLV or OSHA PEL for any of the metallic substances listed in Section 2 or 3 of this SDS, you must take that into consideration

	before utilizing or applying this guideline.
Eye/face protection:	Wear helmet or use face shield with filter lens shade number 12 or darker for open arc processes – or follow the recommendations as specified in ANSI Z49.1, Section 4, based on your process and settings. No specific lens shade recommendation for submerged arc or electroslag processes. Shield others by providing appropriate screens and flash goggles.

Skin Protection

Hand Protection:	Wear protective gloves. Suitable gloves can be recommended by the glove supplier.
Other:	**Protective Clothing:** Wear hand, head, and body protection which help to prevent injury from radiation, sparks and electrical shock. See Z49.1. At a minimum this includes welder's gloves and a protective face shield, and may include arm protectors, aprons, hats, shoulder protection, as well as dark substantial clothing. Wear dry gloves free of holes or split seams. Train the welder not to permit electrically live parts or electrodes to contact skin . . . or clothing or gloves if they are wet. Insulate yourself from the work piece and ground using dry plywood, rubber mats or other dry insulation.
Respiratory Protection:	Keep your head out of fumes. Use enough ventilation and local exhaust to keep fumes and gases from your breathing zone and the general area. An approved respirator should be used unless exposure assessments are below applicable exposure limits.
Hygiene measures:	Do not eat, drink or smoke when using the product. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Determine the composition and quantity of fumes and gases to which workers are exposed by taking an air sample from inside the welder's helmet if worn or in the worker's breathing zone. Improve ventilation if exposures are not below limits. See ANSI/AWS F1.1, F1.2, F1.3 and F1.5, available from the American Welding Society, www.aws.org.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Steel rod with extruded flux coating.
Physical state:	Solid
Form:	Solid
Color:	No data available.
Odor:	No data available.
Odor threshold:	No data available.
pH:	No data available.
Melting point/freezing point:	No data available.
Initial boiling point and boiling range:	No data available.
Flash Point:	No data available.
Evaporation rate:	No data available.
Flammability (solid, gas):	No data available.
Upper/lower limit on flammability or explosive limits	
Flammability limit - upper (%):	No data available.
Flammability limit - lower (%):	No data available.

Explosive limit - upper (%):	No data available.
Explosive limit - lower (%):	No data available.
Vapor pressure:	No data available.
Vapor density:	No data available.
Density:	No data available.
Relative density:	No data available.
Solubility(ies)	
Solubility in water:	No data available.
Solubility (other):	No data available.
Partition coefficient (n-octanol/water):	No data available.
Auto-ignition temperature:	No data available.
Decomposition temperature:	No data available.
Viscosity:	No data available.

10. STABILITY AND REACTIVITY

Reactivity: The product is non-reactive under normal conditions of use, storage and transport.

Chemical Stability: Material is stable under normal conditions.

Possibility of hazardous reactions: None under normal conditions.

Conditions to avoid: Avoid heat or contamination.

Incompatible Materials: Strong acids. Strong oxidizing substances. Strong bases.

Hazardous Decomposition Products: Fumes and gases from welding and allied processes cannot be classified simply. The composition and quantity of both are dependent upon the metal being welded, the process, procedure and electrodes used. Other conditions which also influence the composition and quantity of the fumes and gases to which workers may be exposed include: coatings on the metal being welded (such as paint, plating, or galvanizing), the number of welders and the volume of the worker area, the quality and amount of ventilation, the position of the welder's head with respect to the fume plume, as well as the presence of contaminants in the atmosphere (such as chlorinated hydrocarbon vapors from cleaning and degreasing activities.)

When the electrode is consumed, the fume and gas decomposition products generated are different in percent and form from the ingredients listed in Section 3. Decomposition products of normal operation include those originating from the volatilization, reaction, or oxidation of the materials shown in Section 3, plus those from the base metal and coating, etc., as noted above. Reasonably expected fume constituents produced during arc welding include the oxides of iron, manganese and other metals present in the welding consumable or base metal. Hexavalent chromium compounds may be in the welding fume of consumables or base metals which contain chromium. Gaseous and particulate fluoride may be in the welding fume of consumables which contain fluoride. Gaseous reaction products may include carbon monoxide and carbon dioxide. Ozone and nitrogen oxides may be formed by the radiation from the arc.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation: Potential chronic health hazards related to the use of welding consumables are most applicable to the inhalation route of exposure. Refer to Inhalation statements in Section 11.

Skin Contact: Arc rays can burn skin. Skin cancer has been reported.

Eye contact: Arc rays can injure eyes.

Ingestion: Health injuries from ingestion are not known or expected under normal use.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation: Respiratory exposure to the crystalline silica present in this welding electrode is not anticipated during normal use. Respiratory overexposure to airborne crystalline silica is known to cause silicosis, a form of disabling pulmonary fibrosis which can be progressive and may lead to death. Crystalline silica is on the IARC (International Agency for Research on Cancer) and NTP (National Toxicology Program) lists as posing a cancer risk to humans. Note: All regional authorities do not use the same criteria for assigning carcinogenic classifications to chemicals. For example, the European Union (EU) CLP does not require classifying crystalline silica as a carcinogenic compound. Short-term (acute) overexposure to fumes and gases from welding and allied processes may result in discomfort such as metal fume fever, dizziness, nausea, or dryness or irritation of nose, throat, or eyes. May aggravate pre-existing respiratory problems (e.g. asthma, emphysema). Long-term (chronic) overexposure to fumes and gases from welding and allied processes can lead to siderosis (iron deposits in lung), central nervous system effects, bronchitis and other pulmonary effects.

Information on toxicological effects

Acute toxicity (list all possible routes of exposure)

Oral

Product: Not classified

Specified substance(s):

Iron	LD 50 (Rat): 98.6 g/kg
Limestone	LD 50 (Rat): 6,450 mg/kg
Fluorides (as F)	LD 50 (Rat): 4,250 mg/kg
Sodium silicate	LD 50 (Rat): 1.1 g/kg
Carboxymethyl cellulose, sodium salt	LD 50 (Rat): 2,700 mg/kg

Dermal

Product: Not classified

Inhalation

Product: Not classified

Specified substance(s):

Carboxymethyl cellulose, sodium salt	LC 50 (Rat, 4 h): 5,800 mg/m3

Repeated dose toxicity

Product: Not classified

Skin Corrosion/Irritation

Product: Not classified

Serious Eye Damage/Eye Irritation

Product: Not classified

Respiratory or Skin Sensitization
Product: Not classified

Carcinogenicity
Product: Arc rays: Skin cancer has been reported.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:

Titanium dioxide	Overall evaluation: 2B. Possibly carcinogenic to humans.
Quartz	Overall evaluation: 1. Carcinogenic to humans.

US. National Toxicology Program (NTP) Report on Carcinogens:

Quartz	Known To Be Human Carcinogen.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):

Quartz	Cancer

Germ Cell Mutagenicity
In vitro
Product: Not classified

In vivo
Product: Not classified

Reproductive toxicity
Product: Not classified

Specific Target Organ Toxicity - Single Exposure
Product: Not classified

Specific Target Organ Toxicity - Repeated Exposure
Product: Not classified

Aspiration Hazard
Product: Not classified
Other effects: Organic polymers may be used in the manufacture of various welding consumables. Overexposure to their decomposition byproducts may result in a condition known as polymer fume fever. Polymer fume fever usually occurs within 4 to 8 hours of exposure with the presentation of flu like symptoms, including mild pulmonary irritation with or without an increase in body temperature. Signs of exposure can include an increase in white blood cell count. Resolution of symptoms typically occurs quickly, usually not lasting longer than 48 hours.

Symptoms related to the physical, chemical and toxicological characteristics under the condition of use

Inhalation:
Specified substance(s):

Manganese	Overexposure to manganese fumes may affect the brain and central nervous system, resulting in poor coordination, difficulty speaking, and arm or leg tremor. This condition can be irreversible.

Additional toxicological Information under the conditions of use:

Acute toxicity

Inhalation
Specified substance(s):

Carbon dioxide	LC Lo (Human, 5 min): 90000 ppm
Carbon monoxide	LC 50 (Rat, 4 h): 1,300 mg/l
Nitrogen dioxide	LC 50 (Rat, 4 h): 88 ppm
Ozone	LC Lo (Human, 30 min): 50 ppm

Other effects:
Specified substance(s):

Carbon dioxide	Asphyxia
Carbon monoxide	Carboxyhemoglobinemia
Nitrogen dioxide	Lower respiratory tract irritation

12. ECOLOGICAL INFORMATION

Ecotoxicity
Acute hazards to the aquatic environment:
Fish
Product: Not classified
Specified substance(s):

Sodium silicate	LC 50 (Western mosquitofish (Gambusia affinis), 96 h): 1,800 mg/l

Aquatic Invertebrates
Product: Not classified
Specified substance(s):

Sodium silicate	EC 50 (Water flea (Ceriodaphnia dubia), 48 h): 22.94 - 49.01 mg/l
Manganese	EC 50 (Water flea (Daphnia magna), 48 h): 40 mg/l
Carboxymethyl cellulose, sodium salt	EC 50 (Water flea (Ceriodaphnia dubia), 48 h): 46.04 - 165.37 mg/l

Chronic hazards to the aquatic environment:
Fish
Product: Not classified

Aquatic Invertebrates
Product: Not classified

Toxicity to Aquatic Plants
Product: Not classified

Persistence and Degradability
Biodegradation
Product: No data available.

Bioaccumulative potential
Bioconcentration Factor (BCF)
Product: No data available.

Mobility in soil: No data available.

13. DISPOSAL CONSIDERATIONS

General information: The generation of waste should be avoided or minimized whenever possible. When practical, recycle in an environmentally acceptable, regulatory compliant manner. Dispose of non-recyclable products in accordance with all applicable Federal, State, Provincial, and Local requirements.

Disposal instructions:	Dispose of this material and its container to hazardous or special waste collection point.
Contaminated Packaging:	Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

14. TRANSPORT INFORMATION

DOT

UN Number:	
UN Proper Shipping Name:	NOT DG REGULATED
Transport Hazard Class(es)	
Class:	NR
Label(s):	–
Packing Group:	–
Marine Pollutant:	No

IMDG

UN Number:	
UN Proper Shipping Name:	NOT DG REGULATED
Transport Hazard Class(es)	
Class:	NR
Label(s):	–
EmS No.:	
Packing Group:	–
Marine Pollutant:	No

IATA

UN Number:	
Proper Shipping Name:	NOT DG REGULATED
Transport Hazard Class(es):	
Class:	NR
Label(s):	–
Packing Group:	–
Marine Pollutant:	No
Cargo aircraft only:	Allowed.

TDG

UN Number:	
UN Proper Shipping Name:	NOT DG REGULATED
Transport Hazard Class(es)	
Class:	NR
Label(s):	–
Packing Group:	–
Marine Pollutant:	No

15. REGULATORY INFORMATION

US Federal Regulations

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

None present or none present in regulated quantities.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Chemical Identity	OSHA hazard(s)

Quartz	kidney effects lung effects immune system effects Cancer

CERCLA Hazardous Substance List (40 CFR 302.4):

Chemical Identity	Reportable quantity
Manganese	Included in the regulation but with no data values. See regulation for further details.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Not listed.

SARA 302 Extremely Hazardous Substance

None present or none present in regulated quantities.

SARA 304 Emergency Release Notification

Chemical Identity	Reportable quantity
Manganese	Included in the regulation but with no data values. See regulation for further details.

SARA 311/312 Hazardous Chemical

Chemical Identity	Threshold Planning Quantity
Iron	10000 lbs
Limestone	10000 lbs
Fluorides (as F)	10000 lbs
Titanium dioxide	10000 lbs
Feldspar	10000 lbs
Sodium silicate	10000 lbs
Manganese	10000 lbs
Silicon	10000 lbs
Potassium silicate	10000 lbs
Quartz	10000 lbs
Hydroxyethyl cellulose	10000 lbs
Carboxymethyl cellulose, sodium salt	10000 lbs

SARA 313 (TRI Reporting)

Chemical Identity	Reporting threshold for other users	Reporting threshold for manufacturing and processing
Manganese	10000 lbs	25000 lbs.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)

None present or none present in regulated quantities.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):

None present or none present in regulated quantities.

US State Regulations

US. California Proposition 65

This product contains chemical(s) known to the State of California to cause cancer and/or to cause birth defects or other reproductive harm.

Titanium dioxide	Carcinogenic.
Quartz	Carcinogenic.

WARNING: This product contains or produces a chemical known to the State of California to cause cancer and birth defects (or other reproductive harm). (California Health & Safety Code Section 25249.5 et seq.)

US. New Jersey Worker and Community Right-to-Know Act

Chemical Identity
Limestone
Fluorides (as F)
Titanium dioxide
Manganese
Quartz

US. Massachusetts RTK - Substance List

Chemical Identity
Quartz

US. Pennsylvania RTK - Hazardous Substances

Chemical Identity
Limestone
Fluorides (as F)
Titanium dioxide
Manganese

US. Rhode Island RTK

No ingredient regulated by RI Right-to-Know Law present.

Canada Federal Regulations

List of Toxic Substances (CEPA, Schedule 1)

Chemical Identity
Fluorides (as F)
Titanium dioxide

Export Control List (CEPA 1999, Schedule 3)

Not Regulated

National Pollutant Release Inventory (NPRI)

Canada. National Pollutant Release Inventory (NPRI) Substances, Part 5, VOCs with Additional Reporting Requirements

NPRI PT5	Not Regulated

Canada. Canadian Environmental Protection Act (CEPA). National Pollutant Release Inventory (NPRI) (Parts 1-4)

NPRI	Not Regulated

Greenhouse Gases

Not Regulated

Controlled Drugs and Substances Act

CA CDSI	Not Regulated
CA CDSII	Not Regulated
CA CDSIII	Not Regulated
CA CDSIV	Not Regulated
CA CDSV	Not Regulated
CA CDSVII	Not Regulated
CA CDSVIII	Not Regulated

Precursor Control Regulations
Not Regulated

Mexico. Substances subject to reporting for the pollutant release and transfer registry (PRTR): not applicable

Inventory Status:

Australia AICS:	On or in compliance with the inventory
Canada DSL Inventory List:	One or more components are not listed or are exempt from listing.
EINECS, ELINCS or NLP:	One or more components are not listed or are exempt from listing.
Japan (ENCS) List:	One or more components are not listed or are exempt from listing.
China Inv. Existing Chemical Substances:	On or in compliance with the inventory
Korea Existing Chemicals Inv. (KECI):	On or in compliance with the inventory
Canada NDSL Inventory:	One or more components are not listed or are exempt from listing.
Philippines PICCS:	On or in compliance with the inventory
US TSCA Inventory:	On or in compliance with the inventory
New Zealand Inventory of Chemicals:	On or in compliance with the inventory
Japan ISHL Listing:	One or more components are not listed or are exempt from listing.
Japan Pharmacopoeia Listing:	One or more components are not listed or are exempt from listing.
Mexico INSQ:	One or more components are not listed or are exempt from listing.
Ontario Inventory:	One or more components are not listed or are exempt from listing.
Taiwan Chemical Substance Inventory:	One or more components are not listed or are exempt from listing.

16. OTHER INFORMATION

Definitions:

The Maximum Fume Exposure Guideline™ (MFEG)™ is a guideline limit for total welding fume exposure for a specific consumable product which may be used by employers to manage worker exposure to welding fume where that product is used. The MFEG™ is an estimate of the level of total welding fume exposure for a given product above which the exposure limit for one of the fume constituents may be exceeded. The exposure limits referenced are the American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value (TLV®) and the U.S. OSHA Permissible Exposure Limit (PEL) whichever limit is lower. If local applicable limits for substances listed in Section 2 or 3 of this SDS are lower than the TLV or PEL this must be taken into consideration before utilizing or applying this guideline. The MFEG™ never exceeds 5 mg/m³ which is the maximum recommended exposure limit for total welding fume. **The MFEG™ is intended to serve as a general guideline to assist in the management of workplace exposure to welding fume and does not replace the regular measurement and analysis of worker exposure to individual welding fume constituents in accordance with recommended industrial hygiene practice.**

Revision Date: 03/21/2017

Further Information: Additional information is available by request.

Disclaimer: The Lincoln Electric Company urges each end user and recipient of this SDS to study it carefully. See also www.lincolnelectric.com/safety. If necessary, consult an industrial hygienist or other expert to understand this information and safeguard the environment and protect workers from potential hazards associated with the handling or use of this product. This information is believed to be accurate as of the revision date shown above. However, no warranty, expressed or implied, is given. Because the conditions or methods of use are beyond Lincoln Electric's control, we assume no liability resulting from the use of this product. Regulatory requirements are subject to change and may differ between various locations. Compliance with all applicable Federal, State, Provincial, and local laws and regulations remain the responsibility of the user.

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SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

PRODUCT

Product Name: **MOBILFLUID 424**
Product Description: Base Oil and Additives
Product Code: 201520508030
Intended Use: Hydraulic/transmission fluid

COMPANY IDENTIFICATION

Supplier: **VAD Ltd. (Antigua)**
Fort Road PO Box 359
St. John's Antigua/Barbuda

24 Hour Health Emergency +1 703-741-5970 (CHEMTREC)
Supplier General Contact 1-268-462-0805

SECTION 2 HAZARDS IDENTIFICATION

This material is not hazardous according to regulatory guidelines (see (M)SDS Section 15).

Other hazard information:

HAZARD NOT OTHERWISE CLASSIFIED (HNOC): None as defined under 29 CFR 1910.1200.

PHYSICAL / CHEMICAL HAZARDS

No significant hazards.

HEALTH HAZARDS

High-pressure injection under skin may cause serious damage. Excessive exposure may result in eye, skin, or respiratory irritation.

ENVIRONMENTAL HAZARDS

No significant hazards.

NFPA Hazard ID:	Health:	0	Flammability:	1	Reactivity:	0
HMIS Hazard ID:	Health:	0	Flammability:	1	Reactivity:	0

NOTE: This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary

from person to person.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

This material is defined as a mixture.

Hazardous Substance(s) or Complex Substance(s) required for disclosure

Name	CAS#	Concentration*	GHS Hazard Codes
BORATE ESTER	Confidential	0.1 - < 1%	H317
HYDROTREATED MIDDLE DISTILLATE (PETROLEUM)	64742-46-7	1 - < 5%	H304
SOLVENT DEWAXED HEAVY PARAFFINIC DISTILLATE	64742-65-0	50 - < 60%	H304
ZINC ALKYLDITHIOPHOSPHATE	68649-42-3	1 - 2.5%	H318, H401, H411

* All concentrations are percent by weight unless material is a gas. Gas concentrations are in percent by volume.

As per paragraph (i) of 29 CFR 1910.1200, formulation is considered a trade secret and specific chemical identity and exact percentage (concentration) of composition may have been withheld. Specific chemical identity and exact percentage composition will be provided to health professionals, employees, or designated representatives in accordance with applicable provisions of paragraph (i).

SECTION 4 FIRST AID MEASURES

INHALATION

Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation.

SKIN CONTACT

Wash contact areas with soap and water. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

EYE CONTACT

Flush thoroughly with water. If irritation occurs, get medical assistance.

INGESTION

First aid is normally not required. Seek medical attention if discomfort occurs.

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

Appropriate Extinguishing Media: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

Inappropriate Extinguishing Media: Straight Streams of Water

FIRE FIGHTING

Fire Fighting Instructions: Evacuate area. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply. Firefighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

Unusual Fire Hazards: Pressurized mists may form a flammable mixture.

Hazardous Combustion Products: Aldehydes, Incomplete combustion products, Oxides of carbon, Smoke, Fume, Sulfur oxides

FLAMMABILITY PROPERTIES

Flash Point [Method]: >218°C (424°F) [ASTM D-92]
Flammable Limits (Approximate volume % in air): LEL: 0.9 UEL: 7.0
Autoignition Temperature: N/D

SECTION 6 ACCIDENTAL RELEASE MEASURES

NOTIFICATION PROCEDURES

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations. US regulations require reporting releases of this material to the environment which exceed the applicable reportable quantity or oil spills which could reach any waterway including intermittent dry creeks. The National Response Center can be reached at (800)424-8802.

PROTECTIVE MEASURES

Avoid contact with spilled material. See Section 5 for fire fighting information. See the Hazard Identification Section for Significant Hazards. See Section 4 for First Aid Advice. See Section 8 for advice on the minimum requirements for personal protective equipment. Additional protective measures may be necessary, depending on the specific circumstances and/or the expert judgment of the emergency responders.

For emergency responders: Respiratory protection: respiratory protection will be necessary only in special cases, e.g., formation of mists. Half-face or full-face respirator with filter(s) for dust/organic vapor or Self Contained Breathing Apparatus (SCBA) can be used depending on the size of spill and potential level of exposure. If the exposure cannot be completely characterized or an oxygen deficient atmosphere is possible or anticipated, SCBA is recommended. Work gloves that are resistant to hydrocarbons are recommended. Gloves made of polyvinyl acetate (PVA) are not water-resistant and are not suitable for emergency use. Chemical goggles are recommended if splashes or contact with eyes is possible. Small spills: normal antistatic work clothes are usually adequate. Large spills: full body suit of chemical resistant, antistatic material is recommended.

SPILL MANAGEMENT

Land Spill: Stop leak if you can do it without risk. Recover by pumping or with suitable absorbent.

Water Spill: Stop leak if you can do it without risk. Confine the spill immediately with booms. Warn other shipping. Remove from the surface by skimming or with suitable absorbents. Seek the advice of a specialist before using dispersants.

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction

and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

ENVIRONMENTAL PRECAUTIONS

Large Spills: Dike far ahead of liquid spill for later recovery and disposal. Prevent entry into waterways, sewers, basements or confined areas.

SECTION 7 HANDLING AND STORAGE

HANDLING

Prevent small spills and leakage to avoid slip hazard. Material can accumulate static charges which may cause an electrical spark (ignition source). When the material is handled in bulk, an electrical spark could ignite any flammable vapors from liquids or residues that may be present (e.g., during switch-loading operations). Use proper bonding and/or ground procedures. However, bonding and grounds may not eliminate the hazard from static accumulation. Consult local applicable standards for guidance. Additional references include American Petroleum Institute 2003 (Protection Against Ignitions Arising out of Static, Lightning and Stray Currents) or National Fire Protection Agency 77 (Recommended Practice on Static Electricity) or CENELEC CLC/TR 50404 (Electrostatics - Code of practice for the avoidance of hazards due to static electricity).

Static Accumulator: This material is a static accumulator.

STORAGE

The type of container used to store the material may affect static accumulation and dissipation. Do not store in open or unlabelled containers. Keep away from incompatible materials.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMIT VALUES

Exposure limits/standards (Note: Exposure limits are not additive)

Substance Name	Form	Limit / Standard			NOTE	Source
HYDROTREATED MIDDLE DISTILLATE (PETROLEUM)	Mist.	TWA	5 mg/m3		N/A	OSHA Z1
HYDROTREATED MIDDLE DISTILLATE (PETROLEUM)	Inhalable fraction.	TWA	5 mg/m3		N/A	ACGIH
SOLVENT DEWAXED HEAVY PARAFFINIC DISTILLATE	Mist.	TWA	5 mg/m3		N/A	OSHA Z1
SOLVENT DEWAXED HEAVY PARAFFINIC DISTILLATE	Inhalable fraction.	TWA	5 mg/m3		N/A	ACGIH

Exposure limits/standards for materials that can be formed when handling this product: When mists/aerosols can occur the following are recommended: 5 mg/m³ - ACGIH TLV (inhalable fraction), 5 mg/m³ - OSHA PEL.

NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

No biological limits allocated.

ENGINEERING CONTROLS

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider:
No special requirements under ordinary conditions of use and with adequate ventilation.

PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

Respiratory Protection: If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include:
No special requirements under ordinary conditions of use and with adequate ventilation.

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapor warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

Hand Protection: Any specific glove information provided is based on published literature and glove manufacturer data. Glove suitability and breakthrough time will differ depending on the specific use conditions. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:
No protection is ordinarily required under normal conditions of use.

Eye Protection: If contact is likely, safety glasses with side shields are recommended.

Skin and Body Protection: Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include:
No skin protection is ordinarily required under normal conditions of use. In accordance with good industrial hygiene practices, precautions should be taken to avoid skin contact.

Specific Hygiene Measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

ENVIRONMENTAL CONTROLS

Comply with applicable environmental regulations limiting discharge to air, water and soil. Protect the environment by applying appropriate control measures to prevent or limit emissions.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Note: Physical and chemical properties are provided for safety, health and environmental considerations only and may not fully represent product specifications. Contact the Supplier for additional information.

GENERAL INFORMATION

Physical State: Liquid
Color: Amber
Odor: Characteristic
Odor Threshold: N/D

IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

Relative Density (at 15.6 °C): 0.884
Flammability (Solid, Gas): N/A
Flash Point [Method]: >218°C (424°F) [ASTM D-92]
Flammable Limits (Approximate volume % in air): LEL: 0.9 UEL: 7.0
Autoignition Temperature: N/D
Boiling Point / Range: > 316°C (600°F)
Decomposition Temperature: N/D
Vapor Density (Air = 1): > 2 at 101 kPa
Vapor Pressure: < 0.013 kPa (0.1 mm Hg) at 20 °C
Evaporation Rate (n-butyl acetate = 1): N/D
pH: N/A
Log Pow (n-Octanol/Water Partition Coefficient): > 3.5
Solubility in Water: Negligible
Viscosity: 55 cSt (55 mm2/sec) at 40 °C | 9.5 cSt (9.5 mm2/sec) at 100°C [ASTM D 445]
Oxidizing Properties: See Hazards Identification Section.

OTHER INFORMATION

Freezing Point: N/D
Melting Point: N/A
Pour Point: -36°C (-33°F)
DMSO Extract (mineral oil only), IP-346: < 3 %wt

SECTION 10 STABILITY AND REACTIVITY

REACTIVITY: See sub-sections below.

STABILITY: Material is stable under normal conditions.

CONDITIONS TO AVOID: Excessive heat. High energy sources of ignition.

MATERIALS TO AVOID: Strong oxidizers

HAZARDOUS DECOMPOSITION PRODUCTS: Material does not decompose at ambient temperatures.

POSSIBILITY OF HAZARDOUS REACTIONS: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

INFORMATION ON TOXICOLOGICAL EFFECTS

Hazard Class	Conclusion / Remarks
Inhalation	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Irritation: No end point data for material.	Negligible hazard at ambient/normal handling temperatures.

Ingestion	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Skin	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Skin Corrosion/Irritation: No end point data for material.	Negligible irritation to skin at ambient temperatures. Based on assessment of the components.
Eye	
Serious Eye Damage/Irritation: No end point data for material.	May cause mild, short-lasting discomfort to eyes. Based on assessment of the components.
Sensitization	
Respiratory Sensitization: No end point data for material.	Not expected to be a respiratory sensitizer.
Skin Sensitization: No end point data for material.	Not expected to be a skin sensitizer. Based on assessment of the components.
Aspiration: Data available.	Not expected to be an aspiration hazard. Based on physico-chemical properties of the material.
Germ Cell Mutagenicity: No end point data for material.	Not expected to be a germ cell mutagen. Based on assessment of the components.
Carcinogenicity: No end point data for material.	Not expected to cause cancer. Based on assessment of the components.
Reproductive Toxicity: No end point data for material.	Not expected to be a reproductive toxicant. Based on assessment of the components.
Lactation: No end point data for material.	Not expected to cause harm to breast-fed children.
Specific Target Organ Toxicity (STOT)	
Single Exposure: No end point data for material.	Not expected to cause organ damage from a single exposure.
Repeated Exposure: No end point data for material.	Not expected to cause organ damage from prolonged or repeated exposure. Based on assessment of the components.

OTHER INFORMATION

For the product itself:

Component concentrations in this formulation would not be expected to cause skin sensitization, based on tests of the components, this formulation, or similar formulations.

Contains:

Base oil severely refined: Not carcinogenic in animal studies. Representative material passes IP-346, Modified Ames test, and/or other screening tests. Dermal and inhalation studies showed minimal effects; lung non-specific infiltration of immune cells, oil deposition and minimal granuloma formation. Not sensitizing in test animals.

The following ingredients are cited on the lists below: None.

--REGULATORY LISTS SEARCHED--

1 = NTP CARC
2 = NTP SUS
3 = IARC 1
4 = IARC 2A
5 = IARC 2B
6 = OSHA CARC

SECTION 12 ECOLOGICAL INFORMATION

The information given is based on data for the material, components of the material, or for similar materials, through the application of bridging principals.

ECOTOXICITY

Material -- Not expected to be harmful to aquatic organisms.

MOBILITY

Base oil component -- Low solubility and floats and is expected to migrate from water to the land. Expected to partition to sediment and wastewater solids.

PERSISTENCE AND DEGRADABILITY

Biodegradation:

Base oil component -- Expected to be inherently biodegradable

BIOACCUMULATION POTENTIAL

Base oil component -- Has the potential to bioaccumulate, however metabolism or physical properties may reduce the bioconcentration or limit bioavailability.

SECTION 13 DISPOSAL CONSIDERATIONS

Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

DISPOSAL RECOMMENDATIONS

Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products.

REGULATORY DISPOSAL INFORMATION

RCRA Information: The unused product, in our opinion, is not specifically listed by the EPA as a hazardous waste (40 CFR, Part 261D), nor is it formulated to contain materials which are listed as hazardous wastes. It does not exhibit the hazardous characteristics of ignitability, corrositivity or reactivity and is not formulated with contaminants as determined by the Toxicity Characteristic Leaching Procedure (TCLP). However, used product may be regulated.

Empty Container Warning Empty Container Warning (where applicable): Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

SECTION 14 TRANSPORT INFORMATION

LAND (DOT): Not Regulated for Land Transport

LAND (TDG): Not Regulated for Land Transport

SEA (IMDG): Not Regulated for Sea Transport according to IMDG-Code

Marine Pollutant: No

AIR (IATA): Not Regulated for Air Transport

SECTION 15 REGULATORY INFORMATION

OSHA HAZARD COMMUNICATION STANDARD: This material is not considered hazardous in accordance with OSHA HazCom 2012, 29 CFR 1910.1200.

Listed or exempt from listing/notification on the following chemical inventories: AICS, DSL, ENCS, IECSC, ISHL, KECI, PICCS, TCSI, TSCA

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302

SARA (311/312) REPORTABLE GHS HAZARD CLASSES: None.

SARA (313) TOXIC RELEASE INVENTORY:

Chemical Name	CAS Number	Typical Value
ZINC ALKYLDITHIOPHOSPHATE	68649-42-3	1 - 2.5%

The following ingredients are cited on the lists below:

Chemical Name	CAS Number	List Citations
HYDROTREATED MIDDLE DISTILLATE (PETROLEUM)	64742-46-7	1, 4, 17, 18
SEVERELY HYDROTREATED HEAVY PARAFFINIC DISTILLATE	64742-54-7	17, 18, 19
TOLUENE	108-88-3	15
ZINC ALKYLDITHIOPHOSPHATE	68649-42-3	13, 15, 17, 18, 19

--REGULATORY LISTS SEARCHED--

1 = ACGIH ALL	6 = TSCA 5a2	11 = CA P65 REPRO	16 = MN RTK
2 = ACGIH A1	7 = TSCA 5e	12 = CA RTK	17 = NJ RTK
3 = ACGIH A2	8 = TSCA 6	13 = IL RTK	18 = PA RTK
4 = OSHA Z	9 = TSCA 12b	14 = LA RTK	19 = RI RTK
5 = TSCA 4	10 = CA P65 CARC	15 = MI 293	

Code key: CARC=Carcinogen; REPRO=Reproductive

SECTION 16 OTHER INFORMATION

N/D = Not determined, N/A = Not applicable

KEY TO THE H-CODES CONTAINED IN SECTION 3 OF THIS DOCUMENT (for information only):
H304: May be fatal if swallowed and enters airways; Aspiration, Cat 1
H317: May cause allergic skin reaction; Skin Sensitization, Cat 1
H318: Causes serious eye damage; Serious Eye Damage/Irr, Cat 1
H401: Toxic to aquatic life; Acute Env Tox, Cat 2
H411: Toxic to aquatic life with long lasting effects; Chronic Env Tox, Cat 2

THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:
No revision information

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HOHMANN & BARNARD, INC.
a MiTek company

SAFETY DATA SHEET

1. Identification

Product Identifier: **Mortar Trap™**
General Category: Walls
Manufacturer:

Hohmann & Barnard, Inc.
30 Rasons Court
Hauppauge, NY 11788
(631) 234-0600
www.h-b.com

Telephone Numbers
During normal business hours call: (800) 645-0616
24-hour emergency call Chemtrec: (800) 255-3924

2. Hazards Identification

EMERGENCY OVERVIEW:
This product is not expeted to produce unusual hazards during normal use. Direct contact may irritate skin, or eyes. Due to the products physical nature, no significant harzards are associated with this product.

POTENTIAL HEALTH EFFECTS(See Section 11 for more information)
ACUTE:

Inhalation	Inhalation unlikely, but can burn due to fire creating a dense toxic smoke. Severe over exposure may result in nausea, headache, chills, and fever. Consult a physician.
Eyes	Direct Contact may cause irritation of eyes. If burning, itching, or pain develop, consult a physician.
Skin	Direct contact may cause no more than sligh irritation. Unless caught on fire, causing possible severe thermal burns.
Ingestion	There are no known health effects due to ingestion. Due to the physical nature of the product, ingeston is very unlikely.

CHRONIC:

Inhalation	None Known.
Eyes	None Known.
Skin	Direct, Repeated rubbing may cause irritation to the skin.
Ingestion	None Known.

TARGET ORGANS: Eyes, skin and respirtory system.
PRIMARY ROUTES OF ENTRY: Inhalation, eyes and skin contact.
CLASSIFICATION OF INGREDIENT(S): All substances listed are associated with the nature of raw materials used to create this product. Which are not independent components of the products formulation. All substances, if present, are at levels below regulatory limits. See section 11: Toxicology for details.
POTENTIAL ENVIROMENTAL EFFECTS: This product has no effect on the ecology. Unless ignited.

3. Composition/Information on Ingredients

MATERIAL	WT%	CAS #
Polycaprolactam (Nylon-6)	100	25038-54-4

4. First-Aid Measures

PROCEDURES

Inhalation	Leave area of exposure, and relocate to fresh air. Remain away from area until coughing and other symptoms subside. If conditions warrant, contact a physician.
Eyes	If exposed to eyes, do not rub or itch. To prevent further mechanical irritation, flush thoroughly with water for 20-30 minuties, or till iritation subsides.
Skin	Wash with warm water and soap. If irritation persists, consult a physician.
Ingestion	Product is not intended to be ingested or eaten. If eaten seek medical attention.

MEDICAL CONDITIONS WHICH MAY BE AGGRAVATED: Pre-existing skin diseases, rashes, and dermatitis.

5. Fire-fighting measures

Extinquishing Media	Water spray & foam. Water is the best extinquishing medium. Carbon dioxide & dry chemicals are not recommened because of their lack of cooling, and re-ignition.

Fire Fighting Procedures	Fire fighters and others exposed, wear self-contained breathing apparatus and protective clothing.
Hazardous Combustion Products	Intense heat, dense black smoke, carbon monoxide, carbon dioxide, & hydrocarbon fragments.

Flash Point :	400°C	Auto Ignition:	Not Applicable
Method Used:	Not Established	Flammability Classification :	Not Established
Upper Flammable Limit:	Not Established	Rate Of Burning:	Not Established
Lower Flammable Limit:	Not Established		

6. Accidental release measures

CONTAINMENT:	No precautions. Wear appropriate personal protective equipment when handling. See section 8.
CLEAN-UP:	Use normal clean up procedures. Sweep or gather material to minimize slipping hazards.
DISPOSAL:	Follow local, state, provincial and federal regulations on disposing of the product. Recycling is encourged. Dispose in landfill or by incineration.

7. Handling and storage

HANDLING:	Follow recommednations on label and in the processing guide for the product. Prevent contact with skin and eyes. Use good industrial hygiene pratices. Seconday operations such as grinding, sanding and sawing may product a dust explosion hazard. Use bonding, grounding, venting and explosion relief provisions in accordance with accepted engineering practices.
STORAGE:	Store in a dry place away from moisture, excessive heat and sources of ignition. Avoid storage near foods to prevent food contamination.

8. Exposure controls/personal protection

ENGINEERING CONTROLS: A continuous supply of fresh air to the workplace with the removal of processing fumes through exhaust systems is recommened. Processing fume condensate may be a fire hazard and toxic. Remove periodically from exhaust hoods, ductwork and other surfaces using appropriate personal protection. Refer to **Hazards Idenifications** for information. For powders and residual dusts, refer to Handling and Storage section.

VENTILATION REQUIRMENTS: Must be locally determined to limit exposure to materials at their point of use Design techiques and guidelines may be found in publications such as industrial ventialation.

PERSONAL PROTECTIONS:

Eye/Face:	Wear saftey glasses with side shield or chemical goggles. In addition, use full-face shield when cleaning processing fume condensates from hood, ducts, and other surfaces.
Skin:	Avoid prolonged or repeated contact with material. When melting product, wear long pants, long sleeves, insulated gloves, and face protection when applicable. Use protective clothing, including chemical resistant gloves, to prevent any contact with processing fume condensates.
Respiratory:	When processing fumes are not controlled, use approved protection from organic vapors and acid gases. When dust or powder from secondary operations, such as grinding, sanding, and sawing is not controlled, use respiratory approved equipment for protection against dust.

9. Physical and chemical properties

Appearance:	Sheets	Vapor Density (Air=1):	Not Applicable
Odor:	Slight Odor	Specific Gravity (H2O=1):	1.10 - 1.50
Odor Threshold:	Not Determined	Solubility in water (g/100g):	Insoluble
Phyical State:	Solid	Partition Coefficient:	Not Applicable
pH @ 25°C:	Not Applicable	Auto-ignition Temp:	Not Determined
Melting Point:	205°C	Decomposition Temp:	Not Determined
Freezing Point:	Not Determined	Viscosity:	Not Applicable
Boiling Point:	Not Applicable	Particle Size:	Not Applicable
Flash Point:	375°C	Bulk Density:	Not Determined
Evaporation Rate (BuAc=1):	Not Applicable	Molecular Weight:	Mixture
Upper Flammable Limit (UFL):	Not Determined	VOC Content:	Not Determined
Lower Flammable Limit (LFL):	Not Determined	Percent Volatile:	Zero
Vapor Pressure (mm Hg):	Not Applicable		

10. Stability and reactivity

STABILITY:	Stable under recommended conditions of storage and handling.
REACTIVITY:	Not reactive under recommended conditions of storage, handling, processing and usage.
CONDITIONS TO AVOID:	Do not exceed melt tempature recommendations in products literature.
HAZARDOUS POLYMERIZATION:	None Known.
HAZARDOUS DECOMPOSITION:	Processing fumes evolved at recommended processing conditions may include trace levels of ethylbenzene, arcolein, acetaldehyde, acetophenone, cumene, and other lower molecular weight hydrocarbon fragments.

11. Toxilogical information

ACUTE EFFECTS: Direct contact may cause eye and/or skin irritation. No signs of toxicity due to inhalation.

CHRONIC EFFECTS/CARCINOGENICITY: Direct, repeated rubbing with contact of the skin may cause slight irratation.

CARBON BLACK: These product contain less then 0.03% carbon black. Any exposure to carbon black is expected to remain below OSHA regulations and ACGIH recommended limits during normal handling and use of this product. The national Institure of Occupational Saftey and Health criteria document on carbon black recommends that only carbon black with .1% will be considered suspect of carcinogens.

12. Ecological Information

ENVIROMENTAL TOXICITY: Not expected to present any significant ecological problems.

ECOTOXICITY VALUE: Not Determined .

13. Disposal Considerations

WASTE DISPOSAL METHOD: Recycling is encouraged. Disposal in landfill or by incineration in accordance with federal, state, and local requirments. Collected processing fume condensates and incinerator ash should be tested to determine waste classification. Do not dump into any sewers, on the ground, or into any body of water.

14. Transport information

U.S DOT INFORMATION: Not a hazardous material per DOT shipping requirments. Not regulated.

Shipping Name :	Hohmann & Barnard Mortar Trap™
Hazard Class:	Not classified
UN/NA #:	Not listed
Packing Group:	None
Label(s) required:	Not applicable
RID/ADR:	None
ADNR:	None

15. Regulatory Information

Listed below are chemical substances subject to supplier notification requirments. The precentages, when present, represent average values.

TSCA Status:	This Product complies with the Chemical Substances Inventory requierments of the US EPA Toxic Substances Control Act (TSCA)
WHMIS Classifcation	D2

If any components in this product are known to the State of California to cause cancer and are reproductive hazards they are listed below. .

16. Other information

This material may contain commerically available pigments, dyes, or colorants. These colorants are typically added at concentrations of <5%, but may be added in concentrations as high as 10% USER RESPONSIBILITY: Each user should read and understand this information and incorporate it into individual site saftey programs in accordance with applicable hazard communication standars and regulations.

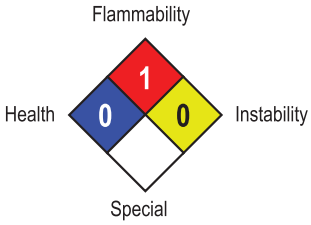
Issue Date: May 31, 2015
Revision Date: May 31, 2015

Hazardous Material Information System (HMIS)

Health	0
Flammability	1
Physical Hazard	0
Personal Protection	B

B- Safety Glasses and Gloves

National Fire Protection Association (NFPA)



HMIS & NFPA Hazard Rating Legend

* = CHRONIC HEALTH HAZARD
0 = INSIGNIFICANT
1 = SLIGHT
2 = MODERATE
3 = HIGH

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Hohmann & Barnard, Inc.
30 Rasons Court | Hauppauge, NY 11788
TEL: 800-645-0616 | FAX: 631-234-0683
www.h-b.com

29 CFR 1910.1200 (OSHA HazCom 2012)

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product identifier

Trade name : NAPA® PREMIUM CONVENTIONAL SAE 80W-85W-90 GEAR OIL

Relevant identified uses of the substance or mixture and uses advised against

Details of the supplier of the safety data sheet	**Emergency telephone number**
Valvoline LLC 3499 Blazer Parkway Lexington, KY 40509 United States of America (USA) 1-800-TEAMVAL	1-800-VALVOLINE **Regulatory Information Number** 1-800-TEAMVAL **Product Information** 1-800-TEAMVAL

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Skin sensitization : Category 1

GHS label elements

Hazard pictograms :



Signal Word : Warning

Hazard Statements : May cause an allergic skin reaction.

Precautionary Statements : **Prevention:**
Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.
Contaminated work clothing must not be allowed out of the workplace.
Wear protective gloves.
Response:
IF ON SKIN: Wash with plenty of soap and water.
If skin irritation or rash occurs: Get medical advice/ attention.
Wash contaminated clothing before reuse.
Disposal:
Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Chemical nature : Defatter

Hazardous components

Chemical name	CAS-No.	Classification	Concentration (%)
RESIDUAL OILS (PETROLEUM), SOLVENT-DEWAXED	64742-62-7	This material is not considered hazardous under the OSHA Hazard Communication Standard (HazCom 2012).	21.105
DISTILLATES (PETROLEUM), HYDROTREATED LIGHT	64742-47-8	Asp. Tox. 1; H304	1.393
AMINES, C12-14-TERT-ALKYL	68955-53-3	Flam. Liq. 4; H227 Acute Tox. 4; H302 Acute Tox. 2; H330 Acute Tox. 3; H311 Skin Corr. 1B; H314 Eye Dam. 1; H318 Skin Sens. 1A; H317	0.343

SECTION 4. FIRST AID MEASURES

General advice : Move out of dangerous area.
Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended.

If inhaled : If breathed in, move person into fresh air.
If unconscious, place in recovery position and seek medical advice.
If symptoms persist, call a physician.

In case of skin contact	:	Remove contaminated clothing. If irritation develops, get medical attention. If on skin, rinse well with water. First aid is not normally required. However, it is recommended that exposed areas be cleaned by washing with soap and water. Wash contaminated clothing before re-use.
In case of eye contact	:	Flush eyes with water as a precaution. Remove contact lenses. Protect unharmed eye. If eye irritation persists, consult a specialist.
If swallowed	:	Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician.
Most important symptoms and effects, both acute and delayed	:	Acute aspiration of large amounts of oil-laden material may produce a serious aspiration pneumonia. Patients who aspirate these oils should be followed for the development of long-term sequelae. Repeated aspiration of small quantities of mineral oil can produce chronic inflammation of the lungs (i.e. lipoid pneumonia) that may progress to pulmonary fibrosis. Symptoms are often subtle and radiological changes appear worse than clinical abnormalities. Occasionally, persistent cough, irritation of the upper respiratory tract, shortness of breath with exertion, fever, and bloody sputum occur. Inhalation exposure to oil mists below current workplace exposure limits is unlikely to cause pulmonary abnormalities. Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include: stomach or intestinal upset (nausea, vomiting, diarrhea) irritation (nose, throat, airways) Headache Dizziness May cause an allergic skin reaction.
Notes to physician	:	No hazards which require special first aid measures.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Water spray Foam Carbon dioxide (CO2) Dry chemical

Unsuitable extinguishing media	:	High volume water jet
Specific hazards during firefighting	:	Do not allow run-off from fire fighting to enter drains or water courses.
Hazardous combustion products	:	carbon dioxide and carbon monoxide Hydrocarbons
Specific extinguishing methods	:	Product is compatible with standard fire-fighting agents.
Further information	:	Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
Special protective equipment for firefighters	:	In the event of fire, wear self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Use personal protective equipment. Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.
Environmental precautions	:	Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.
Methods and materials for containment and cleaning up	:	Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal.
Other information	:	Comply with all applicable federal, state, and local regulations.

SECTION 7. HANDLING AND STORAGE

Advice on safe handling	:	Do not breathe vapours/dust. Do not smoke. Persons susceptible to skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used. Container hazardous when empty. Avoid exposure - obtain special instructions before use.

Avoid contact with skin and eyes.
Smoking, eating and drinking should be prohibited in the application area.
For personal protection see section 8.
Dispose of rinse water in accordance with local and national regulations.

Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated place.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
DISTILLATES (PETROLEUM), HYDROTREATED LIGHT	64742-47-8	TWA	5 mg/m3 Mist	OSHA Z-1
		TWA	200 mg/m3 (total hydrocarbon vapor)	ACGIH
		TWA	5 mg/m3 Mist	OSHA P0
		TWA	5 mg/m3 Mist	NIOSH REL
		ST	10 mg/m3 Mist	NIOSH REL
		PEL	5 mg/m3 particulate	CAL PEL

Hazardous components without workplace control parameters

Components	CAS-No.
AMINES, C12-14-TERT-ALKYL	68955-53-3

Engineering measures : Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

Personal protective equipment

Respiratory protection : Respiratory protection is not required under normal conditions of use.

Hand protection
Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye protection	:	Not required under normal conditions of use. Wear splash-proof safety goggles if material could be misted or splashed into eyes.
Skin and body protection	:	Wear as appropriate: Impervious clothing Safety shoes Choose body protection according to the amount and concentration of the dangerous substance at the work place. Discard gloves that show tears, pinholes, or signs of wear. Wear resistant gloves (consult your safety equipment supplier).
Hygiene measures	:	Wash hands before breaks and at the end of workday.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	:	liquid
Colour	:	amber
Odour	:	No data available
Odour Threshold	:	No data available
pH	:	No data available
Melting point/freezing point	:	No data available
Boiling point/boiling range	:	> 424.9 °F / 218.3 °C (1013.333 hPa)
Flash point	:	> 222 °C Method: Cleveland open cup
Evaporation rate	:	> 1 Ethyl Ether
Flammability (solid, gas)	:	No data available
Upper explosion limit	:	No data available
Lower explosion limit	:	No data available
Vapour pressure	:	< 0.1000000 mmHg
Relative vapour density	:	> 1AIR=1
Relative density	:	0.89 (60.00 °F)

Density	:	0.8916 g/cm3 (15.56 °C)
Solubility(ies)		
Water solubility	:	No data available
Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Thermal decomposition	:	No data available
Viscosity		
Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	146 mm2/s (40 °C)
Oxidizing properties	:	No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	No decomposition if stored and applied as directed.
Chemical stability	:	Stable under recommended storage conditions.
Possibility of hazardous reactions	:	Product will not undergo hazardous polymerization.
Incompatible materials	:	Strong oxidizing agents
Hazardous decomposition products		Aldehydes carbon dioxide and carbon monoxide Carbon monoxide

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure	:	Inhalation Skin contact Eye Contact Ingestion

Acute toxicity
Not classified based on available information.

Components:
RESIDUAL OILS (PETROLEUM), SOLVENT-DEWAXED:
Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 5.58 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Assessment: Not classified as acutely toxic by inhalation under GHS.
Remarks: No mortality observed at this dose.

Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg
Remarks: No mortality observed at this dose.

LD50 (Rabbit): > 2,000 mg/kg
Assessment: Not classified as acutely toxic by dermal absorption under GHS.

DISTILLATES (PETROLEUM), HYDROTREATED LIGHT:
Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg

Acute dermal toxicity : LD50 (Rabbit): > 3,160 mg/kg
Assessment: No adverse effect has been observed in acute dermal toxicity tests.

AMINES, C12-14-TERT-ALKYL:
Acute oral toxicity : LD50 (Rat): 612 mg/kg
Method: OECD Test Guideline 401

Acute inhalation toxicity : LC50 (Rat, female): 1.19 mg/l
Exposure time: 4 h
Test atmosphere: vapour
Method: OECD Test Guideline 403

Acute dermal toxicity : LD50 (Rat): 251 mg/kg
Method: OECD Test Guideline 402

Skin corrosion/irritation
Not classified based on available information.
Product:
Remarks: May cause skin irritation in susceptible persons.

Components:
RESIDUAL OILS (PETROLEUM), SOLVENT-DEWAXED:
Species: Rabbit
Result: No skin irritation

DISTILLATES (PETROLEUM), HYDROTREATED LIGHT:
Result: Slight, transient irritation

AMINES, C12-14-TERT-ALKYL**:**
Species: Rabbit
Result: Corrosive after 3 minutes to 1 hour of exposure

Serious eye damage/eye irritation
Not classified based on available information.
Product:
Remarks: Vapours may cause irritation to the eyes, respiratory system and the skin.

Remarks: Unlikely to cause eye irritation or injury.

Components:
RESIDUAL OILS (PETROLEUM), SOLVENT-DEWAXED**:**
Species: Rabbit
Result: No eye irritation

DISTILLATES (PETROLEUM), HYDROTREATED LIGHT**:**
Result: Slight, transient irritation

AMINES, C12-14-TERT-ALKYL**:**
Species: Rabbit
Result: Corrosive

Respiratory or skin sensitisation
Skin sensitisation: May cause an allergic skin reaction.
Respiratory sensitisation: Not classified based on available information.
Components:
RESIDUAL OILS (PETROLEUM), SOLVENT-DEWAXED**:**
Test Type: Buehler Test
Species: Guinea pig
Assessment: Does not cause skin sensitisation.

AMINES, C12-14-TERT-ALKYL**:**
Test Type: Buehler Test
Species: Guinea pig
Assessment: The product is a skin sensitiser, sub-category 1A.

Germ cell mutagenicity
Not classified based on available information.
Components:
AMINES, C12-14-TERT-ALKYL**:**

Genotoxicity in vitro	:	Test Type: Ames test Test species: Salmonella typhimurium Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471 Result: negative
Genotoxicity in vivo	:	Test Type: Micronucleus test Test species: Mouse Cell type: Bone marrow Method: OECD Test Guideline 474

Result: negative

Carcinogenicity
Not classified based on available information.
Reproductive toxicity
Not classified based on available information.
STOT - single exposure
Not classified based on available information.
STOT - repeated exposure
Not classified based on available information.
Aspiration toxicity
Not classified based on available information.
Product:
No aspiration toxicity classification

Components:
RESIDUAL OILS (PETROLEUM), SOLVENT-DEWAXED**:**
No aspiration toxicity classification

DISTILLATES (PETROLEUM), HYDROTREATED LIGHT**:**
May be fatal if swallowed and enters airways.

Further information
Product:
Remarks: No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity
Product:
Ecotoxicology Assessment

Acute aquatic toxicity	:	Acute aquatic toxicity Category 3; Harmful to aquatic life.
Chronic aquatic toxicity	:	Chronic aquatic toxicity Category 3; Harmful to aquatic life with long lasting effects.

Components:
RESIDUAL OILS (PETROLEUM), SOLVENT-DEWAXED**:**

Toxicity to fish	:	LL50 (Pimephales promelas (fathead minnow)): > 100 mg/l Exposure time: 96 h Test Type: static test Test substance: WAF Method: OECD Test Guideline 203 Remarks: No toxicity at the limit of solubility
Toxicity to daphnia and other aquatic invertebrates	:	EL50 (Daphnia magna (Water flea)): > 10,000 mg/l Exposure time: 48 h Test Type: static test Test substance: WAF Method: OECD Test Guideline 202

Toxicity to algae : NOEL (Pseudokirchneriella subcapitata (green algae)): >= 100 mg/l
End point: Growth inhibition
Exposure time: 72 h
Test Type: static test
Test substance: WAF
Method: OECD Test Guideline 201

Toxicity to fish (Chronic toxicity) : NOELR (Oncorhynchus mykiss (rainbow trout)): Calculated >= 1,000 mg/l
Exposure time: 14 d

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEL (Daphnia (water flea)): 10 mg/l
Exposure time: 21 d
Test substance: WAF
Method: OECD Test Guideline 211

DISTILLATES (PETROLEUM), HYDROTREATED LIGHT**:**

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 2 - 5 mg/l
Exposure time: 96 h
Test Type: semi-static test
Test substance: WAF
Method: OECD Test Guideline 203
Remarks: Information given is based on data obtained from similar substances.

Toxicity to daphnia and other aquatic invertebrates : EL50 (Water flea (Daphnia magna)): 1.4 mg/l
Exposure time: 48 h
Test Type: static test
Test substance: WAF
Method: OECD Test Guideline 202
Remarks: Information given is based on data obtained from similar substances.

Toxicity to algae : EL50 (Pseudokirchneriella subcapitata (green algae)): > 1 - 3 mg/l
Exposure time: 72 h
Test Type: static test
Test substance: WAF
Method: OECD Test Guideline 201
Remarks: Information given is based on data obtained from similar substances.

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEL (Water flea (Daphnia magna)): 0.48 mg/l
Exposure time: 21 d
Test Type: semi-static test
Test substance: WAF
Method: OECD Test Guideline 211
Remarks: Information given is based on data obtained from similar substances.

AMINES, C12-14-TERT-ALKYL**:**

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): 1.3 mg/l Exposure time: 96 h Test Type: static test Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Water flea (Daphnia magna)): 2.5 mg/l Exposure time: 48 h Test Type: static test
Toxicity to algae	:	ErC50 (Pseudokirchneriella subcapitata (microalgae)): 0.44 mg/l End point: Growth inhibition Exposure time: 72 h Test Type: static test Method: OECD Test Guideline 201 NOEC (Pseudokirchneriella subcapitata (microalgae)): 0.05 mg/l End point: Growth inhibition Exposure time: 72 h Test Type: static test Method: OECD Test Guideline 201
M-Factor (Acute aquatic toxicity)	:	1
Toxicity to fish (Chronic toxicity)	:	NOEC (Oncorhynchus mykiss (rainbow trout)): 0.078 mg/l Exposure time: 96 d Test Type: flow-through test Method: OECD Test Guideline 210
M-Factor (Chronic aquatic toxicity)	:	1

Persistence and degradability

Components:

RESIDUAL OILS (PETROLEUM), SOLVENT-DEWAXED**:**

Biodegradability	:	Result: Not readily biodegradable. Biodegradation: 2 - 4 % Exposure time: 28 d Method: OECD Test Guideline 301B

DISTILLATES (PETROLEUM), HYDROTREATED LIGHT**:**

Biodegradability	:	Result: Inherently biodegradable Biodegradation: 58.6 % Exposure time: 28 d Method: OECD Test Guideline 301F Remarks: Expected to be biodegradable

AMINES, C12-14-TERT-ALKYL**:**

Biodegradability	:	Result: Not readily biodegradable.

Biodegradation: 22 %
Exposure time: 28 d
Method: OECD Test Guideline 301D

No data available

Bioaccumulative potential

Components:

AMINES, C12-14-TERT-ALKYL:

Partition coefficient: n-octanol/water : log Pow: 2.9

No data available

Mobility in soil

Components:

No data available

Other adverse effects

No data available

Product:

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal., Harmful to aquatic life with long lasting effects.

Components:

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

General advice : The product should not be allowed to enter drains, water courses or the soil.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Send to a licensed waste management company.

Dispose of in accordance with all applicable local, state and federal regulations.

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Empty containers should be taken to an approved waste handling site for recycling or disposal.
Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION

International transport regulations

REGULATION

ID NUMBER	PROPER SHIPPING NAME	*HAZARD CLASS	SUBSIDIARY HAZARDS	PACKING GROUP	MARINE POLLUTANT / LTD. QTY.

U.S. DOT - ROAD

Not dangerous goods

CFR_RAIL_C

Not dangerous goods

U.S. DOT - INLAND WATERWAYS

Not dangerous goods

TDG_ROAD_C

Not dangerous goods

TDG_RAIL_C

Not dangerous goods

TDG_INWT_C

Not dangerous goods

INTERNATIONAL MARITIME DANGEROUS GOODS

Not dangerous goods

INTERNATIONAL AIR TRANSPORT ASSOCIATION - CARGO

Not dangerous goods

INTERNATIONAL AIR TRANSPORT ASSOCIATION - PASSENGER

Not dangerous goods

MX_DG

Not dangerous goods

***ORM = ORM-D, CBL = COMBUSTIBLE LIQUID**

Marine pollutant		no

Dangerous goods descriptions (if indicated above) may not reflect quantity, end-use or region-specific exceptions that can be applied. Consult shipping documents for descriptions that are specific to the shipment.

SECTION 15. REGULATORY INFORMATION

SARA 311/312 Hazards : Acute Health Hazard

SARA 313 This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop 65 This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

The components of this product are reported in the following inventories:

TSCA : On TSCA Inventory

DSL : All components of this product are on the Canadian DSL

AICS : On the inventory, or in compliance with the inventory

ENCS : On the inventory, or in compliance with the inventory

KECI : On the inventory, or in compliance with the inventory

PICCS : On the inventory, or in compliance with the inventory

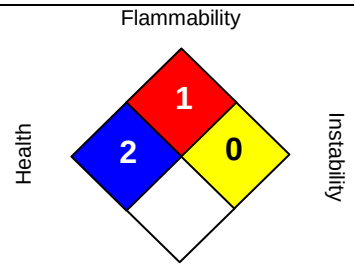
IECSC : On the inventory, or in compliance with the inventory

Inventories
AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TSCA (USA)

SECTION 16. OTHER INFORMATION

Further information
Revision Date: 09/28/2016

NFPA:	**HMIS III:**



HEALTH	**2**
FLAMMABILITY	**1**
PHYSICAL HAZARD	**0**

0 = not significant, 1 =Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

NFPA Flammable and Combustible Liquids Classification
Combustible Liquid Class IIIB

Full text of H-Statements

H227	Combustible liquid.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H311	Toxic in contact with skin.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H330	Fatal if inhaled.

Sources of key data used to compile the Safety Data Sheet
Valvoline internal data including own and sponsored test reports
The UNECE administers regional agreements implementing harmonised classification for labelling (GHS) and transport.

The information accumulated herein is believed to be accurate but is not warranted to be whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances. This SDS has been prepared by Valvoline's Environmental Health and Safety Department (1-800-VALVOLINE).

List of abbreviations and acronyms that could be, but not necessarily are, used in this safety data sheet :
ACGIH : American Conference of Industrial Hygienists
BEI : Biological Exposure Index
CAS : Chemical Abstracts Service (Division of the American Chemical Society).
CMR : Carcinogenic, Mutagenic or Toxic for Reproduction
FG : Food grade

GHS : Globally Harmonized System of Classification and Labeling of Chemicals.
H-statement : Hazard Statement
IATA : International Air Transport Association.
IATA-DGR : Dangerous Goods Regulation by the “International Air Transport Association” (IATA).

ICAO : International Civil Aviation Organization
ICAO-TI (ICAO) : Technical Instructions by the “International Civil Aviation Organization”
IMDG : International Maritime Code for Dangerous Goods
ISO : International Organization for Standardization
logPow : octanol-water partition coefficient
LCxx : Lethal Concentration, for xx percent of test population
LDxx : Lethal Dose, for xx percent of test population.
ICxx : Inhibitory Concentration for xx of a substance
Ecxx : Effective Concentration of xx
N.O.S.: Not Otherwise Specified
OECD : Organization for Economic Co-operation and Development
OEL : Occupational Exposure Limit
P-Statement : Precautionary Statement
PBT : Persistent , Bioaccumulative and Toxic
PPE : Personal Protective Equipment
STEL : Short-term exposure limit
STOT : Specific Target Organ Toxicity
TLV : Threshold Limit Value
TWA : Time-weighted average
vPvB : Very Persistent and Very Bioaccumulative
WEL : Workplace Exposure Level

CERCLA : Comprehensive Environmental Response, Compensation, and Liability Act
DOT : Department of Transportation
FIFRA : Federal Insecticide, Fungicide, and Rodenticide Act
HMIRC : Hazardous Materials Information Review Commission
HMIS : Hazardous Materials Identification System
NFPA : National Fire Protection Association
NIOSH : National Institute for Occupational Safety and Health
OSHA : Occupational Safety and Health Administration
PMRA : Health Canada Pest Management Regulatory Agency
RTK : Right to Know
WHMIS : Workplace Hazardous Materials Information System

Material Safety Data Sheet

May be used to comply with OSHA's Hazard Communication Standard, 29 CFR 1910.1200. Standard must be consulted for specific requirements.

U.S. Department of Labor
Occupational Safety and Health Administration
(Non-Mandatory Form)
Form Approved
OMB No. 1218-0072

IDENTITY *(As Used on Label and List)*
NEW DAD'S DRIP STRIP

Note: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that.

Section I

Manufacturer's Name SANSHER CORPORATION	Emergency Telephone Number (219) 484-2000
Address *(Number, Street, City, State, and ZIP Code)* 8005 N. CLINTON STREET	Telephone Number for Information (219) 484-2000
FORT WAYNE, IN 46825	Date Prepared 9-?-2009
	Signature of Preparer *(optional)* Philip W. Bradley

Section II — Hazardous Ingredients/Identity Information

Hazardous Components (Specific Chemical Identity; Common Name(s))	OSHA PEL	ACGIH TLV	Other Limits Recommended	% *(optional)*
			STEL	
Monochlorotoluene (25168-05-2)	50 PPM	50 PPM	75 PPM	-

Section III — Physical/Chemical Characteristics

Boiling Point	159°C	Specific Gravity (H_2O = 1)	1.08
Vapor Pressure (mm Hg.) @ 20°C	2.6	Melting Point	Liquid
Vapor Density (AIR = 1)	4.38	Evaporation Rate (Butyl Acetate = 1)	0.40

Solubility in Water
72 PPM @ 23°C

Appearance and Odor
Clear, Colorless Liquid with Choroaromatic Odor

Section IV — Fire and Explosion Hazard Data

Flash Point (Method Used)	Flammable Limits	LEL	UEL
115°F (min.) TCC		ND	ND

Extinguishing Media
Use Dry Chemical, Halon, Foam, Carbon Dioxide or Water Spray

Special Fire Fighting Procedures
In Fire Conditions Wear NIOSH/MSHA Approved Positive Pressure Self-Contained Breathing Apparatus. Wear Full Protective Clothing.

Unusual Fire and Explosion Hazards
Decomposition By Burning in Open Flame May Yield Toxic Hydregen Chloride Gas.

Section V — Reactivity Data

Stability			
	Unstable		Conditions to Avoid: Avoid Heat, Sparks, Open Flames and Oxidizing Agents
	Stable	X	

Incompatibility (*Materials to Avoid*): Reacts with Oxidizing Agents

Hazardous Decomposition or Byproducts: Hydrogen Chloride

Hazardous Polymerization			
	May Occur		Conditions to Avoid
	Will Not Occur	X	

Section VI — Health Hazard Data

Route(s) of Entry: Inhalation? Skin? Ingestion?

Health Hazards (*Acute and Chronic*)

Acute - Confined or Poorly Ventilated Area Vapors May Produce Nasal Irritation, Nausea.

Chronic - Excessive Exposure May Cause Incoordination to Unconsciousness and Death.

Carcinogenicity: NTP? None Based on Available Data IARC Monographs? OSHA Regulated?

Signs and Symptoms of Exposure: Nausea or Dizziness

Medical Conditions Generally Aggravated by Exposure: Excessive Expossure May Cause Carboxyhemoglobia, thereby impairing the bloods ability to transport oxygen or May Cause Central Nervous System Effects.

Emergency and First Aid Procedures

Skin-Flush with water; Inhalation - Move to Fresh Air, Call a Physician.

Ingestion-Do Not Induce Vomiting, Call a Physician; Eyes-Irrigate with Water for 15 minutes.

Section VII — Precautions for Safe Handling and Use

Steps to Be Taken in Case Material Is Released or Spilled

Small Spills: Mop Up, Wipe Up or Soak Up Immediately. Keep Away from Open Flame.

Large Spills: Contain Liquid; Transfer to Closed Metal Containers. Keep Out of Water Supply. Keep Away from Open Flame.

Waste Disposal Method

Send to Licensed, Permitted Incinerators, or Evaporate Very Small Quantities in Compliance with Local, State, and Federal Regulation.

Precautions to Be Taken in Handling and Storing

Exercise Reasonable Care and Caution. Store Containers in a Cool, Dry, Well Ventilated Area. Keep Away from Open Flame.

Other Precautions

Concentrated Vapors of this Product are Heavier than Air and Will Collect in Low Areas. Keep Away from Open Flame.

Section VIII — Control Measures

Respiratory Protection (*Specify Type*): NIOSH Approved Respirator for Solvent Vapors

Ventilation		
	Local Exhaust: Provide Adequate Ventilation	Special: NONE
	Mechanical (*General*): Moving Fresh Air Over Work Area	Other: NONE

Protective Gloves: Impervious Gloves Should Be Worn

Eye Protection: Goggles Recommended

Other Protective Clothing or Equipment: Protective Apron

Work/Hygienic Practices: Avoid Prolonged Skin Contact

* U.S.G.P.O. 1986-491-529/45775

Lion Oil Company

Product: Off Road Diesel Fuel **Revision No. 7**

MSDS No. LO0308 **Date of Preparation: 06-11-13**

Section 1 - Chemical Product and Company Identification

Product/Chemical Name: Off Road Diesel Fuel
CAS Number: 68476-34-6
Synonyms: Red Dyed Ultra Low Sulfur Diesel, #2 Diesel, Diesel Fuel, #2 Fuel Oil, High Sulfur Diesel, Red Dyed Diesel, Red Dyed Low Sulfur Diesel, Red Dyed B5 Ultra Low Sulfur Diesel
Description: Red color with distinct hydrocarbon odor
Manufacturer or Distributor: Lion Oil Co., 1000 McHenry St., El Dorado, AR 71730; (870) 862-8111
24-hr Emergency Phone Number: "FOR CHEMICAL EMERGENCY" Spill, Leak, Fire, Exposure or Accident
CALL CHEMTREC – Day or Night 800-424-9300
MSDS CONTACT: Beverly McFarland – 870-864-1306

Section 2 - Hazards Identification

☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆ Emergency Overview ☆☆☆☆☆☆☆☆☆☆

HMIS	
H	1*
F	2
PH	0
PPE†	
†Sec. 8	

Health
Warning! **Fammability**
Combustible liquid moderate fire hazard. **Physical Haz.**
May cause moderate eye and skin irritation.
Long term, prolonged or repeated skin contact may increase the risk of skin cancer.
Harmful or fatal if swallowed – can enter lungs and cause damage.
May be harmful if absorbed through skin.

☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆ Potential Health Effects☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆

Primary Entry Routes: Skin and/or Eye contact, Ingestion, Inhalation,
Target Organs: Skin, Eyes, Central Nervous System
Carcinogenicity: IARC has classified diesel fuel as a group 2B carcinogen, sufficient evidence in animals, possibly carcinogenic to humans. Prolonged or repeated contact with this material can cause cancer. Contains Polynuclear aromatics, which has been designated as a carcinogen by IARC (group 1). Risk of cancer depends on duration and level of exposure. IARC has classified diesel engine exhaust as a group 2A carcinogen, sufficient evidence in animals, probably carcinogenic to humans.

Acute Effects

Eye: May cause irritation of the eye.
Skin: Excessive skin contact may cause irritation and dermatitis.
Inhalation: Irritation, dizziness, headaches, and nausea. Excessive breathing may cause central nervous system effects.
Ingestion: Do Not Induce Vomiting. Causes nausea, vomiting, and cramping; depression of central nervous system ranging from mild headache to anesthesia, coma, and death; pulmonary irritation secondary to exhalation of solvent; signs of kidney and liver damage may be delayed. Aspiration into lungs, causes severe lung irritation with coughing, gagging, dyspnea, substernal distress, and rapidly developing pulmonary edema; later, signs of bronchopneumonia and pneumonitis; acute onset of central nervous system excitement followed by depression.

Chronic Effects

Prolonged or repeated contact with this material can cause cancer. IARC has classified diesel fuel as a group 2B carcinogen, sufficient evidence in animals, possibly carcinogenic to humans. Contains Polynuclear aromatics, which has been designated as a carcinogen by IARC (group 1). Risk of cancer depends on duration and level of exposure.

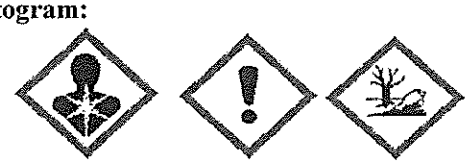
Section Ref. (3, 10)

☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆ GHS CLASSIFICATION ☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆

Hazard class	Hazard Category	Hazard Statement
Combustible Liquid	Category 4	H227
Aspiration hazard	Category 1	H304
Carcinogenicity	Category 2	H350
Acute toxicity, inhalation	Category 4	H332
Specific target organ toxicity (Blood, Liver, Thymus, repeated exposure)	Category 2	H373
Skin, corrosion/irritation	Category 2	H315
Chronic hazards to the aquatic environment	Category 2	H411

☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆ LABEL ELEMENTS ☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆

Pictogram:



Signal Word: Danger

Physical Hazard Statements:

H227 Combustible liquid; will ignite on surface at temperatures above auto-ignition temp.

Health Hazard Statements:

H304 May be fatal if swallowed and enters airways.
H350 May cause cancer.
H332 Harmful if inhaled.
H373 May cause damage to organs through prolonged or repeated exposure.
H315 Causes skin irritation.

Environmental Hazard Statements:

H411 Toxic to aquatic life with long lasting effects.

Precautionary Statements:

Prevention: P280: Wear protective gloves/protective clothing/eye protection/face protection
P260 Do not breathe dust/fume/ gas/ mist/vapors/ spray.

Response: P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.
P331 Do NOT induce vomiting.

Disposal: P501 Dispose of contents/containers to an approved waste management company or reclaimer.

Unclassified hazards: Vapors in the headspace of tanks and containers may ignite and explode at temperatures exceeding auto-ignition temperature where vapor concentrations are within the flammability range. Electrostatic charges may be generated during pumping. Electrostatic discharge may cause fire.

Section 3 - Composition / Information on Ingredients

Ingredient Name	CAS Number	%wt.
Diesel Fuel, A distillate oil having a minimum viscosity of 32.6 SUS at 37.7.degree.C (100.degree.F) to a maximum of 40.1 SUS at 37.7.degree.C (100.degree.F)	68476-34-6	95-100
B100 Biodiesel: (68937-84-8) Fatty Acid Methyl Ester, FAME (67784-80-9) Soybean derived (61788-61-2) Tallow derived (129828-16-6) Canola derived (73891-99-3) Rapeseed derived	mixture	≤ 5.4
Naphthalene	91-20-3	0-1.0
Xylenes	1330-20-7	<0.2

Section 4 - First Aid Measures

Eye Contact: Flush with water for at least 20 minutes. Seek medical attention.
Skin Contact: Remove any contaminated clothing and wash with soap and water at least 20 minutes. Launder or dry-clean clothing before reuse.
Inhalation: Move to fresh air. If breathing is irregular or has stopped, start resuscitation, and then administer oxygen if available. Seek medical attention.
Ingestion: Do not induce vomiting. Vomiting may cause aspiration into lungs. If spontaneous vomiting is about to occur, place victim's head below knees. Seek medical attention.

After first aid, get appropriate in-plant, paramedic, or community medical support. **Section Ref. (4)**

Section 5 - Fire-Fighting Measures

NFPA rating ®	
H	1
F	2
R	0

Flash Point: >140°F
Flash Point Method: PM
Autoignition Temperature: 500 F
LEL: 0.9
UEL: 7.0
Emergency Response Guide: Guide No. 128
Flammability Classification: Combustible liquid
Extinguishing Media: Extinguish with dry chemical, CO2, foam and water fog. Solid streams of water may be ineffective. Cool affected containers and vessels with flooding quantities of water. Apply water from as great a distance as possible. Keep run off water out of sewers and water sources. Minimize breathing of gases, vapor, fumes, or decomposition products. Use self-contained breathing apparatus for enclosed or confined spaces or as otherwise needed.
Unusual Fire or Explosion Hazards: Do not store near strong oxidants or open flame.
Hazardous Combustion Products: Under fire conditions – May form toxic materials; carbon dioxide and monoxide, oxides of sulfur and H2S, and other decomposition products, in the case of incomplete combustion.
Fire-Fighting Instructions: Extinguish with dry chemical, CO2, foam and water fog. Solid streams of water may be ineffective. Cool affected containers and vessels with flooding quantities of water. Apply water from as great a distance as possible. Keep run off water out of sewers and water sources. Minimize breathing of gases, vapor, fumes, or decomposition products.
Special Fire-Fighting Procedures: Use self-contained breathing apparatus for enclosed or confined spaces or as otherwise needed. Cool exposed containers and vessels with water.

Section Ref. (4, 9, 10)

Section 6 - Accidental Release Measures

"FOR CHEMICAL EMERGENCY" Spill, Leak, Fire, Exposure or Accident
CALL CHEMTREC – Day or Night 800-424-9300

Spill /Leak Procedures: Shut off sources of ignition. Shut off leak, if possible without risk. Take up with sand or other non-combustible, absorbent material.
Small Spills: Take up with an absorbent material and place in containers, seal tightly for proper disposal.
Large Spills: Isolate the hazard area and restrict entry to unnecessary personnel. Shut off source of leak only if it can be done so safely or dike and contain the spill. Keep run off out of sewers and water sources. Wear appropriate respirator and protective clothing. If possible remove product with vacuum trucks. Soak up residue with sand or other suitable material, place in containers for proper disposal. Local, state and federal disposal regulations must be followed.
Regulatory Requirements: Report any spills that could reach any surface waters to the U.S. Coast Guard National Response Center (800) 424-8802.

Section Ref. (4)

Section 7 - Handling and Storage

Handling Precautions: Do not handle or store near heat, sparks, or flame.
Storage Requirements: Do not store near strong oxidants or open flames. Avoid water contamination.

Section 8 - Exposure Controls / Personal Protection

Ingredient	OSHA PEL TWA	OSHA PEL STEL	ACGIH TLV TWA	ACGIH TLV STEL	NIOSH REL TWA	NIOSH REL STEL	NIOSH IDLH
Diesel Fuel			100 mg/m^3				
Polynuclear aromatics	0.2 g/m^3		0.2 mg/m^3		0.1 mg/m^3		
Naphthalene	10 ppm		10 ppm	15 ppm	10 ppm	15 ppm	250 ppm
Xylenes	100 ppm		100 ppm	150 ppm	100 ppm	150 ppm	900 ppm

Engineering Controls
Ventilation: General mechanical with local exhaust; sufficient to maintain exposure levels below recommended TLV.
Protective Clothing/Equipment
Gloves: Use chemical resistant gloves resistant to distillate to avoid prolonged or repeated skin contact.
Goggles: Chemical-type goggles or face shield.
Respiratory: Self-contained, positive-pressure breathing apparatus when used in confined or enclosed space or when exposure limits are exceeded. Organic vapor respirators can be used with good ventilation when organic vapors are less than 1000 ppm or ten (10) times permissible exposure limit, which ever is less.

Section Ref. (3)

Section 9 - Physical and Chemical Properties

Physical State: Liquid
Appearance and Odor: Yellow-Green color with distinct hydrocarbon odor
Odor Threshold: No Data
Vapor Pressure: 0.19 psi @ 100°F
Vapor Density (Air=1): 4+
Formula Weight: No Data
Density: No Data
Specific Gravity (H_2O=1, at 4 °C): 0.83 –0.86
pH: No Data
Water Solubility: Negligible
Other Solubilities: No Data
Boiling Point: 320°F - 680°F
Viscosity: 2.6 cst @ 40°C
Refractive Index: No Data
Surface Tension: No Data
% Volatile: <2
Evaporation Rate: 0.02 (Butyl Acetate = 1)

Section 10 - Stability and Reactivity

Stability: Material is stable.
Polymerization: Will not occur.
Chemical Incompatibilities: Do not store near strong oxidants.
Conditions to Avoid: Do not store near open flames.
Hazardous Decomposition Products: Under fire conditions – May form toxic materials; carbon dioxide and monoxide, oxides of sulfur and nitrogen, H2S, and other decomposition products, in the case of incomplete combustion.

Section Ref. (10)

Section 11- Toxicological Information

Toxicity by ingestion: Grade 1; LD50 = 5–15 g/kg
Skin-Rabbit, adult 500 mg Moderate irritation effects
National Technical Information Service. (Springfield, VA 22161) (Formerly U.S. Clearinghouse for Scientific and Technical Information)NTIS** AD-A172-198
Oral-Rat LD50: 9 g/kg
"Toxicology of Petroleum Hydrocarbons, Proceedings of the Symposium, 1st, 1982" MacFarland, H.N., et al., eds., Washington, DC, American Petroleum Institute, 198352MLA2 1,1,83
Skin-Mouse TDLo: 243 g/kg/97W-I: Carcinogenic effects
Fundamental and Applied Toxicology. (Academic Press, Inc., 1 E. First St., Duluth, MN 55802) V.1- 1981- FAATDF 9, 297, 87

Diesel Exhaust:
Inhalation-Rat TCLo: 4900 mg/m^3/8H/2Y-C: Carcinogenic effects
Developments in Toxicology and Environmental Science. (Elsevier, Scientific Publishing Co., POB 211, 1000 AE Amsterdam, Netherlands) V.1- 1977-DTESD7 13, 349, 86
Inhalation-Rat TC: 7 mg/m^3/7H/2Y-I: Carcinogenic effects
Fundamental and Applied Toxicology. (Academic Press, Inc., 1 E. First St., Duluth, MN 55802) V.1- 1981-FAATDF 9, 208, 87
Inhalation-Rat TCLo: 2200 mg/m^3/16H/2Y-I: Neoplastic effects
Developments in Toxicology and Environmental Science. (Elsevier, Scientific Publishing Co., POB 211, 1000 AE Amsterdam, Netherlands) V.1- 1977-DTESD7 13, 471, 86
Inhalation-Rat TC: 8300 mg/m^3/6H/86W-I: Equivocal tumorigenic agent
American Industrial Hygiene Association Journal. (AIHA, 475 Wolf Ledges Pkwy., Akron, OH 44311) V.19- 1958-AIHAAP 42, 382, 81
Inhalation-Rat TC: 7 mg/m^3/7H/2Y-I: Equivocal tumorigenic agent
Annals of the American Conference of Governmental Industrial Hygienists. (American Conference of Governmental Industrial Hygienists, Inc., 6500 Glenway Ave., Bldg. D-5, Cincinnati, OH, 54211) V.1- 1981-ACGHD2 13,3,85

Section Ref. (5, 10)

Section 12 - Ecological Information

Ecotoxicity:
Dangerous to aquatic life in high concentrations.
Fouling to shoreline.
May be dangerous if it enters water intakes.
Notify local health and wildlife officials.
Notify operators of nearby water intakes
Aquatic toxicity: 204 mg/l/24 hr/juvenile American shad/TLm/salt water.
Waterfowl toxicity: more than 20 ml/kg/LD50/mallards

Section Ref. (10)

Section 13 - Disposal Considerations

Disposal: Local, state and federal disposal regulations must be followed.
Container Cleaning and Disposal: "Empty" Container Warning: "Empty" containers retain product residue (liquid and/or vapor) and can be dangerous. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

Section 14 - Transport Information

DOT Transportation Data (49 CFR 172.101):

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description information.

Transportation Information for Bulk Shipments

DOT Shipping Name: Diesel Fuel
DOT Hazard Class: 3
DOT ID No.: UN 1202
DOT Packing Group: III
Hazard Label: Flammable Liquid

Section 15 - Regulatory Information

CERCLA Reportable Quantity (RQ) (40 CFR 302.4):

Compound	CAS Number	RQ
Xylenes (mixed isomers)	1330-20-7	100
Naphthalene	91-20-3	100

SARA 311/312 Codes (40 CFR 370 / 29 CFR 1910.1200):

Fire	Yes
Pressure	No
Reactivity	No
Immediate (acute)	Yes
Delayed (chronic)	Yes

SARA Toxic Chemical (40 CFR 372) Section 313:

Compound	CAS Number	Concentration %
Xylenes (mixed isomers)	1330-20-7	0-0.2
Naphthalene	91-20-3	0-1.0

SARA EHS (Extremely Hazardous Substance) (40 CFR 355): None
TSCA (40 CFR 710): All components of this product are listed on the TSCA Inventory.
State Regulations: The following chemicals are specifically listed by individual states, for details on each states regulatory requirements you should contact the appropriate agency in that state.

Compound	CAS Number	States
Xylenes (mixed isomers)	1330-20-7	CA, MA, NY, NJ, TX, FL, IL, PA
Naphthalene	91-20-3	CA, MA, NJ, TX, FL, IL, PA

CA – CALIFORNIA STATE SUPERFUND HAZARDOUS SUBSTANCE
MA – MASSACHUSETTS SUBSTANCE LIST
NY – NEW YORK HAZARDOUS SUBSTANCE BULK STORAGE LIST
NJ – NEW JERSEY RIGHT TO KNOW HAZARDOUS SUBSTANCE
TX – TEXAS AIR CONTAMINANTS WITH HEALTH EFFECTS SCREENING LEVEL
FL – FLORIDA TOXIC SUBSTANCE LIST
IL – TOXIC SUBSTANCE DISCLOSURE TO EMPLOYEES LIST
PA – PENNSYLVANIA HAZARDOUS SUBSTANCE LIST

Section Ref. (6)

SECTION 16 - Other Information

Prepared By: Lion Oil Control Lab
Revision Notes:
06-11-2013 GHS update
05-06-2011-Swapped sections 2 and 3.
Hazardous Materials Information System (U.S.A.)

HMIS	
H	1
F	2
PH	0
PPE†	
†Sec. 8	

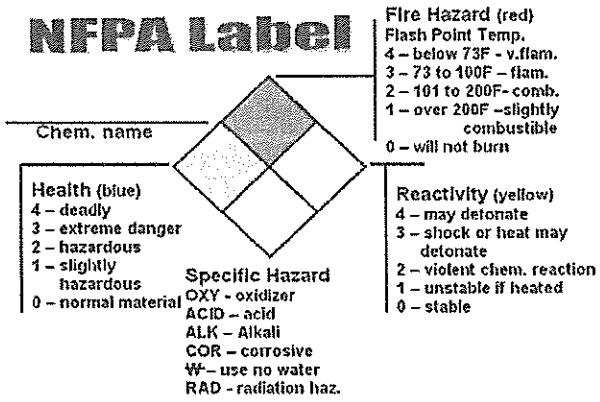
Hazard Ratings

H – Health
F – Fire Hazard
PH – Physical Hazard

4 – Extreme
3 – Serious
2 – Moderate
1 – Slight
0 – Minimal

*** Chronic Hazard -** Chronic (long-term) health effects may result from repeated over exposure.

National Fire Protection Association



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☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆ **Product Label** ☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆

Product Name: Off Road Diesel Fuel
Pictogram:



Unclassified hazards: May ignite on surfaces at temperatures above auto-ignition temperature. Vapors in the headspace of tanks and containers may ignite and explode at temperatures exceeding auto-ignition temperature where vapor concentrations are within the flammability range. Electrostatic charges may be generated during pumping. Electrostatic discharge may cause fire.

Signal Word: Danger

Avoid Prolonged Breathing of Mist or Spray. Average exposure to airborne mist for an 8-hour workday should not exceed 5.0 milligrams of mist per cubic meter of air.
Avoid Eye and Skin Contact: Wear oil-impervious protective clothing. If clothes become contaminated, change to clean clothing after thoroughly washing exposed skin with soap and warm water.

FIRST AID
Inhalation: If overcome by fumes, remove from exposure immediately and call a physician.
Skin: Wash with warm water and soap until the exposed area is clean.
Eyes: Flush with water for at least fifteen (15) minutes. See physician if symptoms persist.
Ingestion: Do not induce vomiting. Obtain medical assistance. Small amounts that accidentally enter through the mouth should be rinsed out until no taste of it remains.
FIRE CONTROL
Use water spray or fog, chemical foam, dry powder or carbon dioxide.

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Reference and research:

(1) The International Chemical Safety Card - http://www.cdc.gov/niosh/ipcs/icstart.html

(2) NIOSH Pocket Guide to Chemical Hazards - http://www.cdc.gov/niosh/npg/

(3) 2007 Guide to Occupational Exposure Values – Compiled by ACGIH

(4) 2008 Emergency Response Guidebook - http://hazmat.dot.gov/pubs/erg/unidnum.htm

(5) Sax's Dangerous Properties of Industrial Materials, 9th Edition; Edited by Richard J. Lewis, Sr.; Version 1.6; Copyright © 1997 by John Wiley & Sons, Inc.

(6) Touchstone Environmental, Inc.; Chemcheck Handbook (educational resource)

(7) Hawley's Condensed Chemical Dictionary, 13th Edition; Edited by Richard J. Lewis, Sr.; Version 1.1 Copyright© 1997 by John Wiley & Sons, Inc.

(8) Environmental Contaminant Reference Databook; VOLUMES I, II and III; by Jan. C. Prager; Version 2.0; Copyright © 1997 by John Wiley & Sons, Inc.

(9) Fire Protection Guide to Hazardous Materials, Twelfth Edition; National Fire Protection Association (NFPA 325) Guide to Hazardous Chemical Properties of Flammable Liquids, Gases, and Volatile Solids. 1994 edition.

(10) Hazardous Materials Handbook; Richard P. Pohanish and Stanley A. Greene, Version 1.3 Copyright© 1997 by Richard P. Pohanish and Stanley A. Greene

SAFETY DATA SHEET

Oxygen

Airgas
an Air Liquide company

Section 1. Identification

GHS product identifier : Oxygen

Chemical name : oxygen

Other means of identification : Molecular oxygen; Oxygen molecule; Pure oxygen; O2; UN 1072; Dioxygen; Oxygen USP, Aviator's Breathing Oxygen (ABO)

Product type : Gas.

Product use : Synthetic/Analytical chemistry.

Synonym : Molecular oxygen; Oxygen molecule; Pure oxygen; O2; UN 1072; Dioxygen; Oxygen USP, Aviator's Breathing Oxygen (ABO)

SDS # : 001043

Supplier's details : Airgas USA, LLC and its affiliates
259 North Radnor-Chester Road
Suite 100
Radnor, PA 19087-5283
1-610-687-5253

24-hour telephone : 1-866-734-3438

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : OXIDIZING GASES - Category 1
GASES UNDER PRESSURE - Compressed gas

GHS label elements

Hazard pictograms :



Signal word : Danger

Hazard statements : May cause or intensify fire; oxidizer.
Contains gas under pressure; may explode if heated.

Precautionary statements

General : Read and follow all Safety Data Sheets (SDS'S) before use. Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand. Close valve after each use and when empty. Use equipment rated for cylinder pressure. Do not open valve until connected to equipment prepared for use. Use a back flow preventative device in the piping. Use only equipment of compatible materials of construction. Open valve slowly. Use only with equipment cleaned for Oxygen service.

Prevention : Keep away from clothing, incompatible materials and combustible materials. Keep reduction valves, valves and fittings free from oil and grease.

Response : In case of fire: Stop leak if safe to do so.

Storage : Protect from sunlight. Store in a well-ventilated place.

Disposal : Not applicable.

Hazards not otherwise classified : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Substance

Chemical name : oxygen

Other means of identification : Molecular oxygen; Oxygen molecule; Pure oxygen; O2; UN 1072; Dioxygen; Oxygen USP, Aviator's Breathing Oxygen (ABO)

Product code : 001043

CAS number/other identifiers

CAS number : 7782-44-7

Ingredient name	%	CAS number
oxygen	100	7782-44-7

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Skin contact : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : As this product is a gas, refer to the inhalation section.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Contact with rapidly expanding gas may cause burns or frostbite.

Inhalation : No known significant effects or critical hazards.

Skin contact : Contact with rapidly expanding gas may cause burns or frostbite.

Frostbite : Try to warm up the frozen tissues and seek medical attention.

Ingestion : As this product is a gas, refer to the inhalation section.

Over-exposure signs/symptoms

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Section 4. First aid measures

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : Contains gas under pressure. Oxidizing material. This material increases the risk of fire and may aid combustion. Contact with combustible material may cause fire. In a fire or if heated, a pressure increase will occur and the container may burst or explode.

Hazardous thermal decomposition products : No specific data.

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Contact supplier immediately for specialist advice. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. If involved in fire, shut off flow immediately if it can be done without risk.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing gas. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Ensure emergency procedures to deal with accidental gas releases are in place to avoid contamination of the environment. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill : Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment.

Large spill : Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Section 7. Handling and storage

Protective measures : Put on appropriate personal protective equipment (see Section 8). Contains gas under pressure. Avoid breathing gas. Do not puncture or incinerate container. Use equipment rated for cylinder pressure. Close valve after each use and when empty. Protect cylinders from physical damage; do not drag, roll, slide, or drop. Use a suitable hand truck for cylinder movement.

Avoid contact with eyes, skin and clothing. Empty containers retain product residue and can be hazardous. Keep away from clothing, incompatible materials and combustible materials. Keep reduction valves free from grease and oil.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in a segregated and approved area. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Cylinders should be stored upright, with valve protection cap in place, and firmly secured to prevent falling or being knocked over. Cylinder temperatures should not exceed 52 °C (125 °F). Separate from reducing agents and combustible materials. Store away from grease and oil. Keep container tightly closed and sealed until ready for use. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
oxygen	None.

Appropriate engineering controls : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Section 8. Exposure controls/personal protection

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

Appearance

Physical state : Gas. [Compressed gas.]

Color : Colorless. Blue.

Odor : Odorless.

Odor threshold : Not available.

pH : Not available.

Melting point : -218.4°C (-361.1°F)

Boiling point : -183°C (-297.4°F)

Critical temperature : -118.15°C (-180.7°F)

Flash point : [Product does not sustain combustion.]

Evaporation rate : Not available.

Flammability (solid, gas) : Extremely flammable in the presence of the following materials or conditions: reducing materials, combustible materials and organic materials.

Lower and upper explosive (flammable) limits : Not available.

Vapor pressure : Not available.

Vapor density : 1.1 (Air = 1)

Specific Volume (ft ^{3}/lb) : 12.0482

Gas Density (lb/ft ^{3}) : 0.083

Relative density : Not applicable.

Solubility : Not available.

Solubility in water : Not available.

Partition coefficient: n-octanol/water : 0.65

Auto-ignition temperature : Not available.

Decomposition temperature : Not available.

Viscosity : Not applicable.

Flow time (ISO 2431) : Not available.

Molecular weight : 32 g/mole

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Hazardous reactions or instability may occur under certain conditions of storage or use.
Conditions may include the following:
contact with combustible materials
Reactions may include the following:
risk of causing fire

Section 10. Stability and reactivity

Conditions to avoid : No specific data.

Incompatible materials : Highly reactive or incompatible with the following materials:
combustible materials
reducing materials
grease
oil

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Hazardous polymerization : Under normal conditions of storage and use, hazardous polymerization will not occur.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity
Not available.

Irritation/Corrosion
Not available.

Sensitization
Not available.

Mutagenicity
Not available.

Carcinogenicity
Not available.

Reproductive toxicity
Not available.

Teratogenicity
Not available.

Specific target organ toxicity (single exposure)
Not available.

Specific target organ toxicity (repeated exposure)
Not available.

Aspiration hazard
Not available.

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Contact with rapidly expanding gas may cause burns or frostbite.

Inhalation : No known significant effects or critical hazards.

Skin contact : Contact with rapidly expanding gas may cause burns or frostbite.

Ingestion : As this product is a gas, refer to the inhalation section.

Symptoms related to the physical, chemical and toxicological characteristics

Section 11. Toxicological information

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Not available.

Section 12. Ecological information

Toxicity

Not available.

Persistence and degradability

Not available.

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
oxygen	0.65	-	low

Mobility in soil

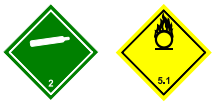
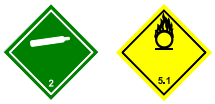
Soil/water partition coefficient (K_{OC}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Empty Airgas-owned pressure vessels should be returned to Airgas. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Do not puncture or incinerate container.

Section 14. Transport information

	DOT	TDG	Mexico	IMDG	IATA
UN number	UN1072	UN1072	UN1072	UN1072	UN1072
UN proper shipping name	OXYGEN, COMPRESSED	OXYGEN, COMPRESSED	OXYGEN, COMPRESSED	OXYGEN, COMPRESSED	OXYGEN, COMPRESSED
Transport hazard class(es)	2.2 (5.1) 	2.2 	2.2 (5.1) 	2.2 (5.1) 	2.2 (5.1) 
Packing group	-	-	-	-	-
Environmental hazards	No.	No.	No.	No.	No.

"Refer to CFR 49 (or authority having jurisdiction) to determine the information required for shipment of the product."

Additional information

DOT Classification : **Limited quantity** Yes.
Quantity limitation Passenger aircraft/rail: 75 kg. Cargo aircraft: 150 kg.
Special provisions A52

TDG Classification : Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.13-2.17 (Class 2), 2.23-2.25 (Class 5).
Explosive Limit and Limited Quantity Index 0.125
ERAP Index 3000
Passenger Carrying Ship Index 50
Passenger Carrying Road or Rail Index 75
Special provisions 42

IATA : **Quantity limitation** Passenger and Cargo Aircraft: 75 kg. Cargo Aircraft Only: 150 kg.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL and the IBC Code : Not available.

Section 15. Regulatory information

U.S. Federal regulations : **TSCA 8(a) CDR Exempt/Partial exemption**: This material is listed or exempted.

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Not listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Refer to Section 2: Hazards Identification of this SDS for classification of substance.

State regulations

Massachusetts : This material is listed.

New York : This material is not listed.

New Jersey : This material is listed.

Pennsylvania : This material is listed.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol (Annexes A, B, C, E)

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list

Australia : This material is listed or exempted.

Canada : This material is listed or exempted.

China : This material is listed or exempted.

Europe : This material is listed or exempted.

Japan : **Japan inventory (ENCS)**: Not determined.
Japan inventory (ISHL): Not determined.

Malaysia : Not determined.

New Zealand : This material is listed or exempted.

Philippines : This material is listed or exempted.

Republic of Korea : This material is listed or exempted.

Section 15. Regulatory information

Taiwan : This material is listed or exempted.

Thailand : Not determined.

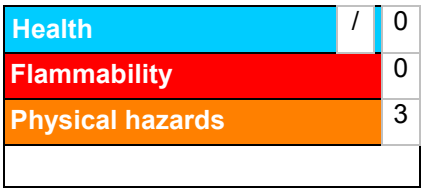
Turkey : Not determined.

United States : This material is listed or exempted.

Viet Nam : Not determined.

Section 16. Other information

Hazardous Material Information System (U.S.A.)



Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on SDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

National Fire Protection Association (U.S.A.)



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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

Procedure used to derive the classification

Classification	Justification
OXIDIZING GASES - Category 1 GASES UNDER PRESSURE - Compressed gas	Expert judgment According to package

History

Date of printing : 2/3/2018

Date of issue/Date of revision : 2/3/2018

Date of previous issue : 1/27/2017

Version : 0.03

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973

Section 16. Other information

as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United Nations

References : Not available.

Indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Safety Data Sheet

Printing date 12/06/2016 **Version Number 1.0** **Reviewed on 12/06/2016**

*

1 Identification

Product identifier

Trade name: ***Perm-A-Barrier Wall Flashing***

SDS ID Number: 2757

Relevant identified uses of the substance or mixture, and uses advised against

Waterproofing.
Specialty construction product. Not intended for other uses

Details of the supplier of the safety data sheet

Manufacturer/Supplier:
GCP Applied Technologies
62 Whittemore Avenue
Cambridge, MA 02140 USA

GCP Canada, Inc.
294 Clements Road W.
Ajax, Ontario L1S 3C6 Canada

Information department:

Environmental Health & Safety
USA: +1-617-876-1400 (24 hours)
+1-800-354-5414 (8AM - 5PM) Not functional within Massachusetts
CAN: 1-905-683-8561 (24 hours)
Email address: msds.gcp@gcpat.com

Transport Emergency: Chemtrec +1-800-424-9300 (24 hours)

*

2 Hazard(s) identification

Classification of the substance or mixture

The product is not classified according to the Globally Harmonized System (GHS).
Additional information:
SDS's are not required for finished articles. nevertheless, the following information is provided to assist with safe use.

Label elements:

Hazard pictograms Not applicable.

Not applicable.

Hazard statements Not applicable.
NFPA ratings (scale 0 - 4)



Health = 1
Fire = 0
Reactivity = 0

HMIS-ratings (scale 0 - 4)



Health = 1
Flammability = 0
Reactivity = 0

Other hazards Contact with residue from adhesive may cause eye and skin irritation.

Results of PBT and vPvB assessment

PBT: Not applicable.

(Cont. on page 2)

Safety Data Sheet

Trade name: *Perm-A-Barrier Wall Flashing*

(Cont. from page 1)

vPvB: Not applicable.

*
3 Composition/information on ingredients

Chemical characterization: Mixture

Hazardous components: Not applicable.

Additional information: Non-hazardous ingredients may be listed in Section 15; Right-To-Know disclosure.

*
4 First-aid measures

Description of first aid measures

General information: Get medical advice/attention if you feel unwell.

After inhalation: No special measures required.

After skin contact: If skin irritation occurs, consult a doctor.

After eye contact:

Rinse cautiously with water for several minutes.
If symptoms persist, consult a physician.

After swallowing:

Rinse mouth.

Do NOT induce vomiting.

Information for doctor:

Most important symptoms and effects, both acute and delayed No further relevant information available.

Indication of any immediate medical attention and special treatment needed No further relevant information available.

5 Fire-fighting measures

Special hazards arising from the substance or mixture No further relevant information available.

Additional information Collect contaminated fire fighting water separately. It must not enter the sewage system.

*
6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

Wear protective equipment. Keep unprotected persons away.

Methods and material for containment and cleaning up: Pick up mechanically.

Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

*
7 Handling and storage

Handling:

Precautions for safe handling

Avoid eye and skin contact with residue from adhesive.

(Cont. on page 3)

Safety Data Sheet

Trade name: *Perm-A-Barrier Wall Flashing*

(Cont. from page 2)

Wash thoroughly after handling.
Wash skin after handling.

Release liners are slippery. Remove from work area immediately after membrane application.

Membrane is slippery when wet or covered with frost.

Release liners may cause slip and trip hazards.

Do not eat, drink or smoke when using this product.

For professional use only. Keep out of children's reach.

Information about protection against explosions and fires:

Removal of release liner may generate a static electrical discharge (spark).

Conditions for safe storage, including any incompatibilities

Storage:

Information about storage in one common storage facility: No special measures required.

Further information about storage conditions: Keep receptacle tightly sealed.

Specific end use(s) No further relevant information available.

*

8 Exposure controls/personal protection

Additional information about design of technical systems: No further data; see item 7.

Control parameters

Components with limit values that require monitoring at the workplace:

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

Additional information: The lists that were valid during the creation were used as basis.

Exposure controls

Personal protective equipment:

General protective and hygienic measures:

Avoid contact with the eyes and skin.

The usual precautionary measures for handling chemicals should be followed.

Breathing equipment:

Control exposure to ingredients with workplace control parameters if mentioned above. If no ingredients are listed, respiratory protection is generally not required.

If exposure limits are listed and may be exceeded, use approved respiratory protective equipment and filter type appropriate for the listed ingredients. (NIOSH, CEN, etc.).

Protection of hands: Gloves should be worn to prevent skin contact and should be impermeable and resistant to the product.

Material of gloves Gloves should be worn to prevent skin contact and should be impermeable and resistant to the product.

Eye protection:



Safety glasses with side shield protection.

Body protection: Use personal protective equipment as required.

(Cont. on page 4)

Safety Data Sheet

Trade name: *Perm-A-Barrier Wall Flashing*

(Cont. from page 3)

*

9 Physical and chemical properties

Information on basic physical and chemical properties

General Information	
Appearance:	
Form:	Solid
Color:	According to product specification
Odor:	Characteristic
Odor threshold:	Not determined.
pH-value (~):	Not applicable.
Change in condition	
Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	Undetermined.
Flash point:	Not applicable.
Flammability (solid, gaseous):	Product is not flammable.
Decomposition temperature:	Not determined.
Auto igniting:	Not determined.
Danger of explosion:	Product does not present an explosion hazard.
Explosion limits:	
Lower:	Not determined.
Upper:	Not determined.
VOC Content (max):	Not determined.
Vapor pressure:	Not applicable.
Density: (~)	1.1 LBS/CF
Relative density	Not determined.
Vapor density	Not applicable.
Evaporation rate	Not applicable.
Solubility in / Miscibility with	
Water:	Not miscible or difficult to mix.
Partition coefficient (n-octanol/water):	Not determined.
Viscosity:	
Dynamic:	Not applicable.
Kinematic:	Not applicable.
Molecular weight	Not applicable.
Other information	No further relevant information available.

*

10 Stability and reactivity

Reactivity Stable under normal conditions.

Chemical stability

Thermal decomposition: No decomposition if used according to specifications.

Possibility of hazardous reactions No dangerous reactions known.

Conditions to avoid No further relevant information available.

Incompatible materials: No further relevant information available.

Hazardous decomposition products: Carbon monoxide and carbon dioxide

Additional information: See section 7 for information on handling, storage and conditions to be avoided.

(Cont. on page 5)

Safety Data Sheet

Trade name: *Perm-A-Barrier Wall Flashing*

(Cont. from page 4)

*
11 Toxicological information

Information on toxicological effects

Acute toxicity:

Primary irritant effect:

on the skin: No irritating effect expected

on the eye: No irritating effect expected

inhalation: No irritating effect expected

Additional toxicological information:

Carcinogenic categories

IARC (International Agency for Research on Cancer) Human Carcinogenicity: Group 1- Positive, Group 2A- Probable, Group 2B- Possible, Group 3- Not Classifiable
None of the ingredients is listed.

NTP (National Toxicology Program) K–Known to be carcinogenic, R–May reasonably be anticipated to be carcinogenic
None of the ingredients is listed.

OSHA-Ca (Occupational Safety & Health Administration)
None of the ingredients is listed.

12 Ecological information

Toxicity

Aquatic toxicity: No further relevant information available.

Persistence and degradability No further relevant information available.

Behavior in environmental systems:

Bioaccumulative potential No further relevant information available.

Mobility in soil No further relevant information available.

Additional ecological information:

General notes: Not known to be hazardous to water.

Results of PBT and vPvB assessment

PBT: Not applicable.
vPvB: Not applicable.

Other adverse effects No further relevant information available.

*
13 Disposal considerations

Waste treatment methods Comply with Federal, State and local regulations.

Recommendation:



Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

(Cont. on page 6)

Safety Data Sheet

Trade name: *Perm-A-Barrier Wall Flashing*

(Cont. from page 5)

Uncleaned packagings:

Recommendation: Disposal must be made according to official regulations.

*

14 Transport information

UN-Number **DOT, IMDG, IATA**	Not applicable.
UN proper shipping name **DOT, IMDG, IATA**	Not applicable.
Transport hazard class(es) **DOT, IMDG, IATA** **Class**	Not applicable.
Packing group **DOT, IMDG, IATA**	Not applicable.
Environmental hazards: **Marine pollutant:**	No
Special precautions for user	Not applicable.
Transport/Additional information:	Not classified as a dangerous good for transport by road, rail or air.
DOT **Remarks:**	Not Regulated.
UN "Model Regulation":	Not applicable.

*

15 Regulatory information

SARA (Superfund Amendments and Reauthorization Act)

Section 302/304 (extremely hazardous substances):

None of the ingredients is listed.

Section 313 Reportable Ingredients (Chemicals present below reporting threshold are exempt):

None of the ingredients is listed.

SARA Section 312/Tier I & II Hazard Categories: None

North America Chemical Inventory Status

TSCA (Toxic Substances Control Act - United States):

All ingredients are listed or exempt from listing unless otherwise noted below.

CEPA (Canadian DSL):

All ingredients are listed or exempt from listing unless otherwise noted below.

California Proposition 65

Chemicals known to cause cancer:

Extracts (petroleum), heavy paraffinic distillate solvent

Polycyclic Aromatic Hydrocarbons

Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed.

Chemicals known to cause reproductive toxicity for males:

None of the ingredients is listed.

Chemicals known to cause developmental toxicity:

None of the ingredients is listed.

(Cont. on page 7)

Safety Data Sheet

Trade name: *Perm-A-Barrier Wall Flashing*

(Cont. from page 6)

Carcinogenicity Categories

EPA (Environmental Protection Agency)
None of the ingredients is listed.

TLV-ACGIH (THE American Conference of Governmental Industrial Hygienists) **Human Carcinogen - A1 Confirmed, A2 Suspected, A3 Unknown Relevance, A4 Not Classifiable**
None of the ingredients is listed.

NIOSH-Cancer (National Institute for Occupational Safety and Health)
None of the ingredients is listed.

Volatile Organic Compounds (VOC) reported per the Emission Standards.
If no g/L value is provided this product is not subject to above standard.

*

16 Other information

The data included herein are presented in accordance with various environment, health and safety regulations. It is the responsibility of a recipient of the data to remain currently informed on chemical hazard information, to design and update its own program and to comply with all national, federal, state and local laws and regulations applicable to safety, occupational health, right-to-know and environmental protection.

Department issuing SDS:

GCP Applied Technologies
62 Whittemore Avenue
Cambridge, MA 02140 USA
USA: +1-617-876-1400 (24 hours)
+1-800-354-5414

Date of preparation / last revision 12/06/2016 / -

The first date of preparation 12/05/2016

Number of revision times and the latest revision date 1.0 / 12/06/2016

HOHMANN & BARNARD, INC.
a MiTek company

SAFETY DATA SHEET

1. Identification

Product Identifier: **PVC Compound**

Manufacturer:

Hohmann & Barnard, Inc.
30 Rasons Court
Hauppauge, NY 11788
(631) 234-0600
www.h-b.com

Telephone Numbers
During normal business hours call: (800) 645-0616
24-hour emergency call Chemtrec: (800) 255-3924

2. Hazards Identification

EMERGENCY OVERVIEW:

Overexposure: The physical state of this PVC compound should prevent any significant oral, ocular or dermal exposure. It is expected to be non-irritating chemically. This material is expected to be practically non-toxic by oral ingestion. Abnormal heating may lead to decomposition with the release of HCl thereby causing irritation of the eyes, skin, and/or respiratory tract. The compound contains organotin stabilizer. Some individuals have been shown to develop sensitization to tin compounds. Irritation of the skin, eyes, or respiratory tract may occur from exposure to HCl or organotin.
Prevention: Do not heat product or skin, eye, and respiration irritation may occur.
Route of Exposure: Inhalation due to overheating.

POTENTIAL HEALTH EFFECTS:

Inhalation: N/A.
Skin: None established for compound. ACGIH limit for organotin 100 g/M3.
Ingestion: Practically inert.
Eyes: N/A.
Carcinogenicity: This material contains vinyl chloride which is a cancer suspect agent. PVC meets RTECS criteria as an equivocal tumorigenic agent - tumors of the lungs, thorax or respiratory system; tumors of the skin (rat - oral). This material may contain trace amounts of vinyl chloride which is a cancer suspect agent. Polyvinyl chloride is listed by IARC, AS OF LISTING IN NTP Fourth Annual Report on Carcinogens, 1985. OSHA, as of 1/30/86, does not list polyvinyl chloride per se but requires labeling that it may contain vinyl chloride monomer which is listed as a cancer suspect agent.

3. Composition/Information on Ingredients

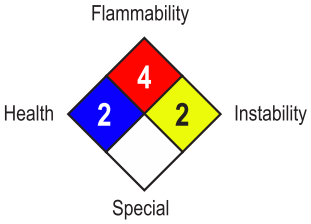
Component	% (WT or VOL)	ACGIH TWA (Units)	ACGIH STEL (Units)	OSHA PEL (Units)
Vinyl Chloride	< 0.0002	5ppm	N/A	5ppm/15M Cl 1ppm/8H TWA
Organotin	3	0.1mg/m3 (as tin)*		

* For all “organic tin compounds.” This value is not specific to this compound. Dr. Herbert Stokinger, Chairman of the Threshold Limits Committee of ACGIH, stated the following: *“Although the Committee fully appreciated the fact that there is a wide variation in toxicity among the various tin compounds, the lack of adequate toxicologic information on each of the various existing tin compounds and the possibility of still more to come has resulted in the only possible way to handle the problem, namely to set an extremely low level for the control of the most toxic of the Organotin compounds. In setting such a limit on the basis of the most toxic, exposures to other tin compounds are automatically controlled.”*

Hazardous Material Information System (HMIS)

Health	2
Flammability	4
Physical Hazard	0
Personal Protection	G

National Fire Protection Association (NFPA)



HMIS & NFPA Hazard Rating Legend

* = CHRONIC HEALTH HAZARD
0 = INSIGNIFICANT
1 = SLIGHT
2 = MODERATE
3 = HIGH

4. First-Aid Measures

INHALATION: Remove victim to fresh air. Get medical attention if necessary.
SKIN: N/A.
INGESTION: Practically inert.
EYES: In the event of eye irritation due to HCl exposure, irrigate eyes with cool water for at least 15 minutes. Seek medical attention, if needed.
NOTES TO PHYSICIANS/FIRST AID PROVIDERS: No data found.

5. Fire-fighting measures

FLASH POINT: 735°F (390°C) (ASTM D1929)
EXTINGUISHING MEDIA: Water, carbon dioxide or foam.
HAZARDOUS COMBUSTION PRODUCTS: No data found.
FIRE FIGHTING PROCEDURES: No Data Found.
FIRE FIGHTER PROTECTION: Use a self-contained breathing apparatus approved for acid vapors.
UNUSUAL FIRE AND EXPLOSION HAZARDS: PVC compound will not continue to burn after ignition without an external fire source. Burning or temperatures at or above about 450°F (232°C) liberates HCl gas.

6. Accidental release measures

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Vacuum, sweep, or shovel up immediately.
WASTE DISPOSAL METHODS: Approved landfill or high temperature modern incineration under controlled conditions due to formation of HCl.
CLEAN WATER ACT REQUIREMENTS: N/A
RESOURCE CONSERVATION AND RECOVERY ACT (RCRA) REQUIREMENTS: N/A

7. Handling and storage

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: Store in dry area below 100ºF.
OTHER PRECAUTIONS: When opening truck or railcar for unloading, ventilate before entering.
REGISTRATIONS/CERTIFICATIONS: N/A.

8. Exposure controls/personal protection

ENGINEERING CONTROLS: No data found
ADMINISTRATIVE CONTROLS: No data found

PERSONAL PROTECTIVE EQUIPMENT
PROTECTIVE GLOVES: N/A
EYE PROTECTION: Safety Glasses
RESPIRATORY PROTECTION (SPECIFIC TYPE): None under normal processing conditions.
OTHER: N/A

VENTILATION
LOCAL EXHAUST: Recommended for processing equipment when compound is heated.
MECHANICAL (GENERAL): N/A
SPECIAL: N/A
OTHER: N/A.

9. Physical and chemical properties

Physical Form: Solid
Appearance: 4/32 inch cubes, various colors & transparencies
Color: No data found
Boiling Point: N/A
Melting Point: N/A
Freezing Point: No data found
Specific Gravity: 1.2 - 1.4
Density: No data found
Bulk Density: No data found
Viscosity: No data found
pH: N/A
Water Solubility: None
Solvent Solubility: No data found
Partition Coefficient-Octanol / Water: No data found
Molecular Weight: No data found
Decomposition Temp.: No data found

Taste: No data found
Odor: None
Odor Threshold: No data found
Vapor Pressure: < 0.1
Vapor Density: No data found
Evaporation Rate: N/A
VOC (Weight): No data found
VOC (Volume): No data found
Volatiles (Weight): No data found
Volatiles (Volume): No data found
Flash Point: >400°F (>204°C)
Flash Point Test: 735°F (390°C) (ASTM D1929)
Upper Explosion Limit: N/A
Lower Explosion Limit: N/A
Auto Ignition: No data found
Flammability (Solid, Gas): No data found

10. Stability and reactivity

STABILITY: Stable.
HAZARDOUS DECOMPOSITION: Slow release of HCl when heated above 450ºF (232ºC).
HAZARDOUS POLYMERIZATION: Will not occur.
CONDITIONS TO AVOID: Overheating.
INCOMPATIBLE MATERIALS: Polyvinyl chloride compounds should not come into contact with Acetal or Acetal copolymers in elevated temperature processing equipment. The two materials are not compatible and will react in a violent decomposition when mixed under conditions of heat and pressure.

11. Toxilogical information

ROUTES OF ENTRY: Inhalation due to overheating of product.
TARGET ORGANS: No data found.
EFFECTS OF OVEREXPOSURE: The physical state of this PVC compound should prevent any significant oral, ocular or dermal exposure. It is expected to be non-irritating chemically. This material is expected to be practically non-toxic by oral ingestion. Abnormal heating may lead to decomposition with the release of HCl thereby causing irritation of the eyes, skin, and/or respiratory tract. The compound contains organotin stabilizer. Some individuals have been shown to develop sensitization to tin compounds. Irritation of the skin, eyes, or respiratory tract may occur from exposure to HCl or organotin.

CARCENOGENICTY: This material contains vinyl chloride which is a cancer suspect agent. PVC meets RTECS criteria as an equivocal tumorigenic agent - tumors of the lungs, thorax or respiratory system; tumors of the skin (rat - oral). This material may contain trace amounts of vinyl chloride which is a cancer suspect agent. Polyvinyl chloride is listed by IARC, AS OF LISTING IN NTP Fourth Annual Report on Carcinogens, 1985. OSHA, as of 1/30/86, does not list polyvinyl chloride per se but requires labeling that it may contain vinyl chloride monomer which is listed as a cancer suspect agent.

12. Ecological Information

No data available for this product.

13. Disposal Considerations

Dispose of according to local, state, and federal regulations for non-hazardous solid waste

14. Transport information

D.O.T. Shipping Information: Not data found.
I.M.O. Shipping Information: Not data found.

15. Regulatory Information

FDA: N/A
USDA: N/A
CPSC: Not listed in Hazardous Substances Labeling Guides.
TSCA: Mixture. CAS #9002-86-2
DOT: PROPER SHIPPING NAME: Plastic materials, other than foam, cellular, expanded or sponge.
HAZARD CLASS: N/A
LABEL REQUIRED: N/A
IDENTIFICATION NO.: N/A
OTHER PERTINENT INFORMATION: N/A
OSHA: May contain trace amounts of vinyl chloride monomer, a cancer suspect agent. Check OSHA Regulations 29 CFR, Title 29, Chapter XVII, part 1910 to determine compliance with the Regulation, including whether VCM concentrations exceed the action level.

16. Other information

Issue Date: May 31, 2015
Revision Date: May 31, 2015
The data in this Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process. This information is taken from sources or based upon data believed to be reliable; however, Hohmann & Barnard, Inc. disclaims any warranty, express or implied, as to the absolute correctness or sufficiency of any of the foregoing or that additional or other measures may be required under particular conditions.

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MATERIAL SAFETY DATA SHEET

I. PRODUCT IDENTIFICATION

PRODUCT NAME:	**QUALIPUR 7600 PART A**
CHEMICAL FAMILY:	Polyester Resin Based Line Paint
OSHA HAZARD COMMUNICATION STATUS:	This product is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29 CFR 1910.1200.

II. HAZARDOUS INGREDIENTS

COMPONENT(S):	%:	OSHA:	ACGIH:
Butyl Acetate CAS # 132-86-4	5-10 %	150 ppm TWA 200 ppm STEL	150 ppm TWA 200 ppm STEL
Xylene CAS # 1330-20-7	2-5 %	100 ppm TWA 150 ppm STEL	100 ppm TWA 150 ppm STEL

III. PHYSICAL DATA

APPEARANCE:	Liquid
COLOR:	Pigmented
ODOR:	Of solvent
SPECIFIC GRAVITY:	1.30 @ 77 DEG F (25 DEG C)
BULK DENSITY:	10.8 lbs/gal
SOLUBILITY IN WATER:	Insoluble
% VOLATILE BY VOLUME:	Approximately 30%

IV. FIRE & EXPLOSION DATA

FLASH POINT:	98 DEG F (37 DEG C) Set-A-Flash Closed Tester (ASTM-D 3278-78)
FLAMMABILITY LIMITS:	(% BY VOLUME IN AIR):
LOWER:	1.7 %
UPPER:	9.0 %
EXTINGUISHING MEDIA:	Water fog, CO_2, dry chemical, foam.

SPECIAL FIRE FIGHTING PROCEDURES:
Full emergency equipment with self-contained breathing apparatus should be worn by fire-fighters. Use cold water spray to cool fire-exposed containers to minimize risk of rupture. Closed containers may explode when exposed to extreme heat. Solvent vapors may be heavier than air. Under conditions of stagnant air, vapors may build up and travel along the ground to an ignition source which may result in flash back to the source of the vapors.

V. HUMAN HEALTH DATA

PRIMARY ROUTES OF ENTRY: Skin and eye contact, inhalation.

HUMAN EFFECTS AND SYMPTOMS OF OVEREXPOSURE

SKIN CONTACT
Repeated or prolonged skin contact can result in dry, defatted skin. Irritation with redness and swelling may develop into dermatitis.

EYE CONTACT
Liquid, aerosols and mist may irritate the eyes and can cause tearing, redness and swelling. If left untreated, corneal damage can occur and injury is slow to heal.

INHALATION
Vapors and mists irritate the nose and throat. Inhalation of higher concentrations may cause headache, nausea, fatigue, narcosis and loss of appetite.

INGESTION
Swallowing can result in irritation of the digestive tract. Symptoms can include sore throat, abdominal pain, nausea, vomiting and diarrhea.

VI. EMERGENCY & FIRST AID PROCEDURES

SKIN CONTACT: Remove contaminated clothing. Wash skin thoroughly with soap and water. Wash clothing thoroughly before reuse.

EYE CONTACT: Flush with copious amounts of lukewarm (low pressure) water for at least 15 minutes while holding eyelids open. Obtain medical attention if irritation persists.

INHALATION: Move individual to fresh air and administer oxygen or artificial respiration as needed. Obtain medical attention.

INGESTION: DO NOT INDUCE VOMITING. DO NOT GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. Consult a physician.

VII. EMPLOYEE PROTECTION RECOMMENDATIONS

SKIN: Chemical resistant gloves (butyl rubber, nitrile rubber). Cover as much of the exposed area as possible with appropriate clothing. If skin creams are used, keep the area covered only by the cream to a minimum.

EYE: Liquid chemical goggles or full-face shield. Contact lenses should not be worn.

RESPIRATORY/VENTILATION: Exhaust ventilation sufficient to keep the airborne concentrations below the TLV. A respirator that is recommended or approved for use in organic vapor containing environments (air purified or fresh air supplied) may be necessary. In spray applications, an organic vapor/ particulate respirator or air supplied unit is necessary. Consider type of application and environmental concentrations.

ADDITIONAL PROTECTIVE MEASURES: Clean, fresh running water should be available. Educate and train employees in safe use of this product. Follow all label instruction.

VIII. REACTIVITY DATA

STABILITY:	Stable.
POLYMERIZATION:	Will not occur.
INCOMPATIBILITY (MATERIALS TO AVOID):	Oxidizers.
HAZARDOUS DECOMPOSITION PRODUCTS:	By fire - carbon monoxide and carbon dioxide.

IX. SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:
Ventilate area. Remove all ignition sources. Dike or impound material and control further spillage. Cover spill with absorbent material such as sawdust, sand, sweeping compound or diatomaceous earth. Collect material in open containers. Flush spill area with water.

WASTE DISPOSAL METHOD:
Waste and container disposal must be in accordance with federal, state, and local environmental control regulations. Empty containers must be handled with care due to product residue. DO NOT HEAT OR CUT EMPTY CONTAINERS WITH ELECTRIC OR GAS TORCH.

X. STORAGE & HANDLING INFORMATION

STORAGE TEMPERATURE:	40 DEG F - 95 DEG F (4 DEG C - 35 DEG C)
AVERAGE SHELF LIFE:	1 year in closed containers.

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:
Keep away from heat, sparks and open flame. Store in a cool, dry, well-ventilated area away form incompatible materials. Vent containers frequently, and more often in warm weather, to relieve pressure. Electrically ground all equipment when handling this

product and use only non-sparking tools. Keep container tightly closed when not in use. Do not use pressure to empty container. Wash thoroughly after handling. Do not get into eyes, on skin or on clothing.

OTHER PRECAUTIONS:

Do not cut, grind, weld or drill on or near containers. Containers, even those that have been emptied, will retain product residue and vapors. Always obey hazard warnings and handle empty containers as if they are full.

XI. STATE REGULATORY INFORMATION

The following chemicals are specifically listed by individual states; other product specific health and safety data in other sections of the MSDS may also be applicable for state requirements. For details on your regulatory requirements, contact the appropriate agency in your state.

COMPONENT	CAS NUMBER	CONCENTRATION	STATE CODE
1-Methoxy 2-Propanol Acetate	108-65-6	15-20%	PA3
Polyester Polyol	Proprietary	30-40%	PA3
Butyl Acetate	123-86-4	5-10%	PA1
Xylene	1330-20-7	2-5%	PA1

PA1 = Pennsylvania Hazardous Substance List
PA3 = Pennsylvania non-hazardous present at 3% or greater

TSCA: All components in this mixture are included on the TSCA inventory.

XII. TRANSPORTATION INFORMATION

PRODUCT LABEL: QUALIPUR 7600 PART A

DOT (HM-181; DOMESTIC SURFACE)

PROPER SHIPPING NAME:	Paint Related Material
HAZARD CLASS OR DIVISION:	3
UN/NA NUMBER:	UN 1263
PACKAGING GROUP:	PG III
HAZARD LABEL(S):	Flammable Liquid
HAZARD PLACARD(S):	Flammable

ICAO/IATA (AIR)

PROPER SHIPPING NAME:	Paint Related Material
HAZARD CLASS DIVISION NUMBER:	3
UN NUMBER:	UN 1263
SUBSIDIARY RISK:	None
PACKING GROUP:	PG III
HAZARD LABEL(S):	Flammable Liquid
RADIOACTIVE?:	Non-radioactive
PASSENGER AIR - MAXIMUM QUANTITY:	60 L
PASSENGER INSTRUCTION NUMBER:	309
CARGO AIR - MAXIMUM QUANTITY:	220 L
CARGO AIR INSTRUCTION NUMBER:	310

IMO/IMDG CODE (OCEAN)

PROPER SHIPPING NAME:	Paint Related Material
HAZARD CLASS DIVISION NUMBER:	3.3
UN NUMBER:	UN 1263
PACKING GROUP:	PG III
HAZARD LABEL(S):	Flammable Liquid
HAZARD PLACARD(S):	Flammable Liquid

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MATERIAL SAFETY DATA SHEET

I. PRODUCT IDENTIFICATION

PRODUCT NAME:	**QUALIPUR 7600 PART B**
CHEMICAL FAMILY:	Aliphatic Polyisocyanate
OSHA HAZARD COMMUNICATION STATUS:	This product is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29 CFR 1910.1200.

II. HAZARDOUS INGREDIENTS

COMPONENT(S):	%:	OSHA:	ACGIH:
Homopolymer of HDI CAS # 28182-81-2 * 1 mg/m3 recommended by the manufacturer	99.3 %	Not Established	Not Established
Hexamethylene Diisocyanate (HDI) CAS # 822-06-0	* %	Not Established	0.005 ppm

Residual monomer content less than 0.50% based on resin solids at time of manufacture. However, after 3-6 months of storage, the free monomer content may rise to a maximum of 1.6 %.

III. PHYSICAL DATA

APPEARANCE:	Liquid
COLOR:	Clear/pale yellow
ODOR:	Negligible
MOLECULAR WEIGHT:	Approximately 500 (polyisocyanate)
BOILING POINT:	Not established
VAPOR PRESSURE.:	Polyisocyanate: Approx. 7.5×10^{-5} mmHg @ 68 DEG F (20 DEG C)
SPECIFIC GRAVITY:	1.14 @ 68 DEG F (20 DEG C)
BULK DENSITY:	9.5 lbs/gal
SOLUBILITY IN WATER:	Insoluble; reacts slowly with water to liberate CO_2 gas.
% VOLATILE BY VOLUME:	Negligible

IV. FIRE & EXPLOSION DATA

FLASH POINT: 356 DEG F (180 DEG C) DIN 51376

EXTINGUISHING MEDIA : Dry chemical, carbon dioxide, foam, water spray for large fires.

SPECIAL FIRE FIGHTING PROCEDURES:
Full emergency equipment with self-contained breathing apparatus and full protective clothing should be worn by fire fighters. During a fire, HDI vapors and other irritating, highly toxic gases may be generated by thermal decomposition or combustion. (See Section VIII). Isolate from heat, electrical equipment, sparks and open flame. Closed containers may explode when exposed to extreme heat or burst when contaminated with water (CO_2 evolved).

V. HUMAN HEALTH DATA

PRIMARY ROUTES OF ENTRY: Inhalation, skin and eye contact.

HUMAN EFFECTS AND SYMPTOMS OF OVEREXPOSURE

INHALATION
ACUTE EXPOSURE: HDI vapors or mist at concentrations above the TLV can irritate (burning sensation) the mucous membranes in the respiratory tract (nose, throat, lungs) causing runny nose, sore throat, coughing, chest discomfort, shortness of breath and reduced lung function (breathing obstruction). Individuals with a pre-existing, non-specific bronchial hyperreactivity can respond to concentrations below the TLV with similar symptoms as well as asthma attack. Exposure well above the TLV may lead to bronchitis, bronchial spasm and pulmonary edema (fluid in lungs). These effects are usually reversible. Chemical or hypersensitive pneumonitis, with flu-like symptoms (e.g. fever, chills) has also been reported.
CHRONIC EXPOSURE: As a result of previous repeated overexposures or a single large dose, certain individuals will develop isocyanate sensitization (chemical asthma) which will cause them to react to a later exposure to isocyanate at levels well below the TLV. These symptoms, which include: chest tightness, wheezing, cough, shortness of breath or asthma attack, could be immediate or delayed (up to several hours after exposure). Similar to many non-specific asthmatic responses, there are reports that once sensitized, an individual can experience these symptoms upon exposure to dust, cold air or other irritants. This increased lung sensitivity can persist for weeks and in severe cases for several years. Chronic overexposure to isocyanates has also been reported to cause lung damage (including decrease in lung function) which may be permanent. Sensitization can either be temporary or permanent.

SKIN CONTACT
ACUTE EXPOSURE: Isocyanates react with skin protein and moisture and can cause irritation which may include the following symptoms: reddening, swelling, rash, scaling or blistering. Cured material is difficult to remove.
CHRONIC EXPOSURE: Prolonged contact can cause reddening, swelling, rash, scaling or blistering. Individuals who have developed a skin sensitization can develop these symptoms as a result of contact with very small amounts of liquid material or as a result of exposure to vapor-only exposure.

EYE CONTACT
ACUTE EXPOSURE: Liquid, aerosols or vapors are irritating and can cause tearing, reddening and swelling accompanied by a stinging sensation and/or a feeling like that of fine dust in the eyes.
CHRONIC EXPOSURE: None found

INGESTION
ACUTE EXPOSURE: Can result in irritation and possible corrosive action in the mouth, stomach tissue and digestive tract.
CHRONIC EXPOSURE: None found.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Asthma, other respiratory disorders (bronchitis, emphysema, bronchial hyperreactivity), skin allergies, eczema.

EXPOSURE LIMITS:
Not established for the product as a whole. Refer to Section II for exposure limits of hazardous constituents.

VI. EMERGENCY & FIRST AID PROCEDURES

INHALATION: Move to an area free from risk of further exposure. Administer oxygen or artificial respiration as needed. Obtain medical attention. Asthmatic-type symptoms may develop and may be immediate or delayed up to several hours. Treatment is essentially symptomatic. Consult physician.

SKIN CONTACT: Remove contaminated clothing immediately. Wash affected skin thoroughly with soap and water. Wash contaminated clothing thoroughly before reuse. For severe exposures, get under safety shower after removing clothing, then get medical attention. For lesser exposures, seek medical attention if irritation develops or persists after the area is washed.

EYE CONTACT: Flush with copious amounts of lukewarm water (low pressure) for at least 15 minutes, holding eyelids open at all times. Refer individual to physician or ophthalmologist for immediate follow-up.

INGESTION: DO NOT INDUCE VOMITING. Give 1 to 2 cups of milk or water to drink. DO NOT GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. Consult physician.

VII. EMPLOYEE PROTECTION RECOMMENDATIONS

RESPIRATORY: An air-supplied respirator must be worn during spray applications, during long-term (over 1 hour) exposures in environments of high concentration near the TLV, an air purifying respirator equipped with organic cartridges or canisters and dust filters can be used. However, due to the poor warning properties of this product, proper fit and timely replacement of filter elements must be ensured. Observe OSHA regulations for respirator use (29 CFR 1910.134).

SKIN: Chemical resistant gloves (butyl rubber, nitrile rubber). Cover as much of the exposed skin area as possible with appropriate clothing. If skin creams are used, keep the area protected only by the cream to a minimum.

EYE: Liquid chemical goggles or full-face shield. Contact lenses should not be worn.

VENTILATION: Local exhaust should be used to maintain levels below the TLV whenever this product is processed, heated or spray applied. For spray applications, an air-supplied respirator must be worn.

OTHER: Clean, fresh running water should be available. Educate and train employees in safe use of this product. Follow all label instructions.

VIII. REACTIVITY DATA

STABILITY:	Stable under normal conditions.
POLYMERIZATION:	May occur if in contact with moisture or other materials which react with isocyanates. May occur at temperatures over 400 DEG F (204 DEG C).
INCOMPATIBILITY (MATERIALS TO AVOID):	Water, amines, strong bases, alcohols, metal compounds and surface active materials.
HAZARDOUS DECOMPOSITION PRODUCTS:	By high heat and fire: carbon monoxide, carbon dioxide, oxides of nitrogen, HCN, HDI.

IX. SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:
Evacuate non-essential personnel. Remove all sources of ignition and ventilate the area. Put on personal protective equipment. Cover the spill with sawdust, vermiculite, Fuller's earth or other absorbent material. Pour decontamination solution over spill area and allow to
react for at least 10 minutes. Collect material in open containers and add further amounts of decontamination solution. Remove containers to a safe place, cover loosely, and allow to stand for 24 to 48 hours. Wash down spill area with decontamination solutions. Decontamination solutions: nonionic surfactant Union Carbide's Tergitol TMN-10 (20%) and water (80%); concentrated ammonia (3-8%), detergent (2%) and water (90-95%). Respiratory protection is recommended during spill clean-up. (See Respiratory Protection, Section VII).

WASTE DISPOSAL METHOD:
Waste and container disposal must be in accordance with federal, state, and local environmental control regulations. Incineration is the preferred method. Empty containers must be handled with care due to product residue. Decontaminate containers prior to disposal. DO NOT HEAT OR CUT EMPTY CONTAINERS WITH ELECTRIC OR GAS TORCH. (See Sections IV and VIII).

X. STORAGE & HANDLING INFORMATION

STORAGE TEMPERATURE.:	40 DEG F - 95 DEG F / (4 DEG C - 35 DEG C)
AVERAGE SHELF LIFE:	6 months in closed container.
SPECIAL SENSITIVITY (HEAT, LIGHT, MOISTURE):	If container is exposed to high heat, 400 DEG F (204 DEG C) it can be pressurized and possibly rupture. HDI reacts slowly with water to form CO_2 gas. This gas can cause sealed containers to expand and possibly rupture explosively.

PRECAUTIONS TO BE TAKEN IN HANDLING & STORING:

Keep away from heat, sparks and open flame. Ground containers during storage and transfer operations. Store in tightly closed containers to prevent moisture contamination. Do not reseal if contamination is suspected. At maximum storage temperatures noted, material may slowly polymerize without hazard. Ideal storage temperature range for easeof handling is 50-85 DEG F (10-27 DEG C). Avoid contact with skin and eyes.

XI. STATE REGULATORY INFORMATION

The following chemicals are specifically listed by individual states; other product specific health and safety data in other sections of the MSDS may also be applicable for state requirements. For details on your regulatory requirements, contact the appropriate agency in your state.

COMPONENT	CAS NUMBER	CONCENTRATION	STATE CODE
Homopolymer of HDI	28182-81-2	99.3%	PA3

PA3 = Pennsylvania non-hazardous present at 3% or greater

TSCA: All components in this mixture are included on the TSCA inventory.

XII. TRANSPORTATION INFORMATION

PRODUCT LABEL: QUALIPUR 7600 Part B

DOT (HM-181; DOMESTIC SURFACE)

PROPER SHIPPING NAME: Other Regulated Substances, Liquid, N.O.S.
* SEE NOTE BELOW

HAZARD CLASS OR DIVISION: 9
UN/NA NUMBER: NA3082
PACKAGING GROUP: PG III
HAZARDOUS SUBSTANCE: MDI, (Methylene diphenyl diisocyanate)
DOT PRODUCT RQ lbs (kgs) 25000 lbs (11340.0 kgs)
HAZARD LABEL(S): Class 9
HAZARD PLACARD(S): Class 9

* WHEN IN CONTAINERS OF LESS THAN THE PRODUCT RQ, THIS MATERIAL SHIPS AS NON-REGULATED.

ICAO/IATA (AIR)

HAZARD CLASS DIVISION NUMBER: Non-Regulated

IMO/IMDG CODE (OCEAN)

HAZARD CLASS DIVISION NUMBER: Non-Regulated

HMIS RATINGS:

Health	Flammability	Reactivity
3*	1	1

0=Minimal 1=Slight 2=Moderate 3=Serious 4=Severe
*=Chronic Health Hazard

CONCRETE/CONCRETE PRODUCTS

Section I - Product and Company Identification

Material Identity (Trade Names):	Ready Mix Concrete, Concrete, Portland Cement Concrete, Concrete Blocks (Wet Unhardened Concrete and Dry Hardened Concrete Products)
Manufacturer's Name:	Speedway Construction Products
Address:	4817 Industrial Rd, Fort Wayne, IN 46825
Phone Number:	800-227-5649
Fax Number:	260-203-9805

Section II - Hazardous Ingredients/Identity Information

Hazardous Components Chemical Identity/ Common Names	CAS Number	OSHA PEL	ACGIH TLV	MSHA PEL	%
Portland Cement	65997-15-1	15mg/m^3 (Total) 5mg/m^3 (Respirable)	10 mg/m^3	10 mg/m^3 (Total)	10 - 30%
Limestone (Calcium Carbonate-C_aCO_3	1317-65-3	15mg/m^3 (Total) 5mg/m^3 (Respirable)	10 mg/m^3	10 mg/m^3 (Total)	25 - 65%
Crystalline Silica (Quartz)*	14808-60-7	30/(%SiO_2+2)mg/m^3 (Total) 10/(%SiO_2+2) mg/m^3 (Respirable)	0.5 mg/m^3 (Respirable Quartz)	30/(%SiO_2+3)mg/m^3 (Total) 10/(%SiO_2+2) mg/m^3 (Respirable)	0.5 - 80%
Fly Ash* which contains:	68131-74-8	N/A	N/A	N/A	0 - 15%
Aluminum Oxide(Al_2O_3)	1344-28-1	15mg/m^3 (Total) 5mg/m^3 (Respirable)	10 mg/m^3	10 mg/m^3	0.1 - 2%
Amorphous Silica	61790-53-2	80 mg/m^3/(%SiO_2)	10mg/m^3 (Inhalable) 3mg/m^3(Respirable)	20 mppcf	0.01 - 3%
Calcium Oxide(CaO)	1305-78-8	5mg/m^3	2 mg/m^3	5mg/m^3	0 - 1%
Iron Oxide(Fe_2O_3)	1309-37-1	10 mg/m^3 (as Fe_2O_3)	5 mg/m^3 (as FE)	10 mg/m^3 (as Fe_2O_3)	0.01 - 2%
Slag*-Which Contains:	N/A	N/A	N/A	N/A	3 - 21%
Aluminum Oxide(Al_2O_3)	1344-28-1	15mg/m^3 (Total) 5mg/m^3 (Respirable)	10 mg/m^3	10 mg/m^3	0 - 4%
Calcium Oxide(CaO)	1305-78-8	5mg/m^3	2 mg/m^3	5mg/m^3	1 - 11%
Amorphous Silica Hydrated	61790-53-2	80 mg/m^3/(%SiO_2)	10mg/m^3 (Inhalable) 3mg/m^3(Respirable)	20 mppcf	1 - 11%
Crystalline Silica (Quartz)*	14808-60-7	30/(%SiO_2+2)mg/m^3 (Total) 10/(%SiO_2+2) mg/m^3 (Respirable)	0.5 mg/m^3 (Respirable Quartz)	30/(%SiO_2+3)mg/m^3 (Total) 10/(%SiO_2+2) mg/m^3 (Respirable)	0 - 3%
Magnesium Oxide	1309-48-4	15mg/m^3	10 mg/m^3	10 mg/m^3	0 - 4%

Section II - Hazardous Ingredients/Identity Information (Continued)

Iron Oxide(Fe_2O_3)	1309-37-1	10 mg/m^3 (as Fe_2O_3)	5 mg/m^3 (as FE)	10 mg/m^3 (as Fe_2O_3)	0 - 2%
Particulates Not Otherwise Classified	N/A	15mg/m^3 (Total) 5mg/m^3 (Respirable)	10mg/m^3 (Inhalable) 3mg/m^3(Respirable)	10 mg/m^3 (Total)	0 - 1%
Magnesium Oxide	7439-96-5	(C)15mg/m^3 (as Mn)	0.2mg/m^3 (as Mn)	5 mg/m^3 (as Mn)	0 - 0.5%
Sulfur	7704-34-9	N/A	N/A	N/A	<1%

* Each of these ingredients may have quartz (silica) as a component. The percent of silica varies greatly from product to product and also within the same product. Silica exposure may occur when respirable dust is present. Dust is not present in freshly mixed unhardened concrete.

*Since blast furnace slag cement is manufactured from materials mined from the earth, trace but detectable amounts of naturally occurring metals, and possibly harmful elements may be found during chemical analysis.

Ingredients are expressed as oxides for quantitative purposes. Actual oxides do not generally occur in "free form" but rather as complex silica based glasses or crystals.

Chemical admixtures are present in quantities comprising less than 1%. These chemical admixtures can be both dry and/or liquid. MSDS's for admixtures are available upon request.

Section III - Physical/Chemical Characteristics

Boiling Point	N/A	**Specific Gravity (H_2O = 1)**	Wet Concrete 1.9 to 2.4
Vapor Pressure (mm Hg)	N/A	**Melting Point**	N/A
Vapor Density (Air=1)	N/A	**Evaporation Rate (Butyl Acetate=1)**	N/A
Solubility in Water:	Not Soluble		
Appearance and Odor:	Unhardened wet concrete is an odorless gray, plastic, flowable, granular mud of varying color and texture. Hardened Concrete products are odorless solid materials.		

Section IV - Fire and Explosion Hazard Data

Flash Point:	Not Combustible	**Flammable Limits:**	Not Flammable	**LEL:** N/A	**UEL**: N/A
Extinguishing Media:	This material is noncombustible. Use extinguishing media appropriate to surrounding fire.				
Special Fire Fighting Procedures:	Do not expose skin or eyes to wet unhardened concrete. Be aware of runoff from fire control methods. Do not release wet unhardened concrete into sewers or waterways, as it will harden and obstruct sewers and waterways.				
	Wet concrete is caustic. Avoid breathing dust.				
Unusual Fire and Explosion Hazards:	Concrete poses no fire related hazard				

Section V - Reactivity Data

Stability: Stable under normal temperatures and pressures
Wet unhardened concrete sets and hardens in 2 to 8 hours and is no longer hazardous. Hardened concrete is stable.

Conditions to Avoid: Do not let wet unhardened concrete to set on skin, tools, or surfaces. Product hardens in 2 to 8 hrs.

Incompatibility (Materials to Avoid): Stable under expected conditions of use. Under unanticipated conditions of use, crystalline silica may react with hydrofluoric acid to produce a corrosive gas (silicon tetrafluoride). Aluminum powder and other alkali and alkaline earth metals will react in wet mortar or concrete, liberating hydrogen gas.

Hazardous Decomposition or Byproducts: Thermal oxidative decomposition of limestone can produce lime. The lime does not add to the hazards associated with the use of the product.
Silica-containing respirable dust particles may be generated. When heated, quartz is slowly transformed into tridimite (above 860°C/1580°F) and cristobalite (above 1470°C/2678°F).

Hazardous Polymerization: Not known to occur

Section VI - Health Hazard Data

Route(s) of Entry: **Inhalation?** Yes **Skin?** No **Ingestion?** Unlikely

Health Hazards:

Emergency Overview:

Wet unhardened concrete can cause chemical burns to eyes and skin. Avoid direct contact and use protective clothing. Skin contact with wet concrete can dry the skin and cause alkali burns. Within 12 to 48 hours after skin contact, first, second, or third degree burns may occur. Eye contact with wet unhardened concrete may cause burning and possible corneal edema.

Avoid breathing excessive dust from hardened/dried material. Dust may irritate the eyes, skin, and respiratory tract. Breathing silica-containing dust for long periods in the workplace can cause lung damage and lung disease called silicosis. Silicosis or lung cancer can result in permanent injury or death. Cutting, grinding, crushing or drilling hardened concrete or concrete products may generate dust containing crystalline silica. Note: This product is normally mixed, transported and used only when wet. This reduces the potential for dust exposure. After product has dried and hardened, further handling or processing may generate dust.

Eye Contact: Contact may result in chemical (caustic) burns and eye injury which may be progressive and could cause blindness. Symptoms may include tearing, redness, pain, swelling with blurred vision. Direct contact with dust may

Cause irritation by mechanical abrasion.

Skin Contact: May cause skin irritation with redness, an itching or burning feeling, and swelling of the skin. May cause contact dermatitis, with symptoms that may include reddening, irritation, and rash. More severe effects, including chemical (alkali) burns and skin ulcers may occur. Direct contact to dust may cause irritation by mechanical abrasion.

Skin Absorption: Not expected to be a significant route of exposure.

Ingestion: Direct contact with exposed tissues may result in severe irritation with pain, nausea, vomiting and possibly chemical (alkali) burns. Ingestion of large amounts may cause gastrointestinal irritation and blockage.

Inhalation:

Acute Effects: Breathing dust may cause nose, throat, lung, and mucous membrane irritation, including choking, depending on the degree of exposure. Inhalation of high levels of dust can cause chemical burns to the nose, throat and lungs. Coughing, sneezing, and shortness of breath may occur following exposures in excess of recommended exposure limits.

Chronic Effects: ***The following information pertains to creating dust from hardened dry material:***

Prolonged overexposure to respirable dusts in excess of allowable exposure limits can cause inflammation of the lungs leading to possible fibrotic changes, a medical condition known as pneumoconiosis.

Prolonged and repeated inhalation of respirable crystalline silica-containing dust in excess of allowable exposure limits may cause a chronic form of silicosis, an incurable lung disease that may result in permanent lung damage or death. Chronic silicosis generally occurs after 10 years or more of over exposure: a more accelerated type of silicosis may occur between 5 and 10 years of higher levels of exposure. Silicosis can be progressive and symptoms can appear at any time, even years after exposure has ceased. Symptoms of silicosis may include, but are not limited to, the following: shortness of breath; difficulty breathing with or without exertion; coughing; diminished work capacity; diminished chest expansion; reduction of lung volume; right heart enlargement and/or failure. Persons with silicosis have an increased risk of pulmonary tuberculosis infection. Use of concrete products for construction purposes is not believed to cause acute toxic effects. Repeated over exposures to very high levels of respirable crystalline silica for periods as short as six months may cause acute silicosis. Acute silicosis is a rapidly progressive, incurable lung disease that is typically fatal. Symptoms include (but are not limited to): shortness of breath, cough, fever, weight loss, and chest pain.

Carcinogenicity: Concrete products are not listed on the NTP, IARC, or OSHA list of carcinogens. However, in October 1996, IARC classified respirable crystalline from occupational sources as carcinogenic (Group 1). The NTP indicates that crystalline silica (respirable size) is a known human carcinogen (Group 1). These classifications are based on sufficient evidence of carcinogenicity in certain experimental animals and on selected epidemiological studies of workers exposed to crystalline silica. Iron oxide is listed by IARC as exhibiting evidence of carcinogenicity in experimental animals.

Medical Conditions Generally Aggravated by Exposure: Individuals with chronic respiratory disorders should minimize inhalation of dust generated from cutting, grinding, or drilling hardened concrete. Individuals with skin diseases should minimize skin contact with the dust.

Section VII - Emergency and First Aid Procedures

Wet Unhardened Concrete on Skin:

Quickly remove contaminated clothing. Wash affected areas thoroughly with soap and water. Consult a physician if irritation persists.

Wet Unhardened Concrete or Hardened Concrete Dust In Eyes:

Gently lift the eyelids and flush immediately and continuously with flooding amounts of water for a minimum of 15 minutes. Consult a physician immediately if irritation persists or develops later.

Ingestion of Wet Unhardened Concrete or Concrete Dust:

Never give anything by mouth to an unconscious or convulsing person. Consult a physician immediately.

Inhalation of hardened Concrete Dust:

Remove exposed person to fresh air and support breathing as needed. Encourage victim to cough, spit out, and blow nose to remove dust. Consult a physician immediately if irritation persists or later develops.

Physicians Note:

Ingestion of large amounts of wet unhardened concrete is unlikely. However, if wet concrete is swallowed, to prevent re-exposing the esophagus and stomach, do not induce emesis or perform gastric lavage. Immediate dilution may prevent esophageal burns. For severe burns, consider esophagostomy, within the first 24 hours. Neutralization with acidic agents is not advised because of increased risk of exothermic burns. Water-mineral oil soaks or washing with soap and water may aid in removing hardened concrete form the skin.

Section VIII - Precautions for Safe Handling and Use

Material Is Released or Spilled:

Personnel involved with the handling of wet unhardened concrete should take steps to avoid contact with the eyes and skin, through the use of gloves and suitable clothing. Wet unhardened concrete should be recycled or allowed to harden and disposed of.

Waste Disposal Method:
Allow wet unhardened concrete to harden and recycle or dispose of in a landfill as common solid waste. Follow applicable Federal, State, and local regulations for disposal. The material is not listed as a hazardous waste under designations by the EPA or DOT.

Precautions to be Taken in Handling and Storing:
Silica-containing respirable dust particles may be generated by crushing, cutting, grinding, or drilling hardened concrete or concrete products. Follow protective controls defined in Section IX when handling these products.

Section IX - Control Measures

Respiratory Protection:
When exposed to dust from cutting, grinding, crushing, or drilling hardened concrete or concrete products above recommended limits, wear a suitable NIOSH-approved respirator with a protection factor appropriate for the level of exposure. Seek guidance from a qualified industrial hygienist, safety professional, or other suitably knowledgeable individual prior to respirator selection and use. For emergency or non-routine operations (e.g., confined spaces), additional precautions or equipment may be required. Respirator use must comply with applicable MSHA or OSHA standards, which include provisions for a user training program, respirator repair and cleaning, respirator fit testing, and other requirements.

Ventilation:
Local Exhaust: When cutting, grinding, crushing, or drilling hardened concrete, provide general or local ventilation systems, as needed, to maintain airborne dust concentrations below the OSHA PEL's, MSHA PEL's, and ACGIH TLV. Local exhaust ventilation is preferred since it prevents release of contaminants into the work area by controlling it at the source.

Mechanical (General): See above recommendations.

Section IX - Control Measures (Continued)

Other: Respirable dust and quartz levels from hardened concrete cutting, grinding, crushing, or drilling operations should be monitored regularly. Dust and quartz levels in excess of applicable OSHA PEL's, MSHA PEL's, and ACGIH TLV's should be reduced by all feasible engineering controls including but not limited to, wet suppression, ventilation, process enclosure, and enclosed employee work stations.

Special:	None reported
Protective Gloves:	When handling wet unhardened concrete, wear impervious gloves to prevent skin contact. Wash thoroughly after handling.
Eye Protection:	When cutting, grinding, crushing, or drilling hardened concrete, wear safety glasses with side shields or dust goggles in dusty environments. When there is a splash hazard working with wet unhardened concrete, wear safety glasses with side shields or goggles.
Other protective Clothing or Equipment:	Wear suitable protective clothing as needed to prevent skin contact with wet unhardened concrete. Make available (if necessary), the use of eyewash stations and suitable washing facilities.
Work/Hygienic Practices:	Avoid dust inhalation and direct contact with skin and eyes. Wear gloves, boots, and other protective gear when pouring wet unhardened concrete. If respiratory protection is used, institute a respiratory protection program that includes regular training, inspection, maintenance, and evaluation. To prevent ingestion and skin contact, practice good personal hygiene. Wash contaminated skin before eating, drinking, smoking, lavatory use and before applying cosmetics.

DISCLAIMER:
The information contained in this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process. The information set forth herein is based on technical data that the Company believes to be accurate. It is intended for use by persons having technical skill and at their own discretion and risk. Since conditions of use are outside the Company's control, the Company makes no warranties, expressed or implied, and assumes no liability in connection with any use of this information.

SAFETY DATA SHEET

SECTION 1 – IDENTIFICATION

Product Identifier:	Reinforced Resin Bonded Abrasive Products
Manufacturer Name:	Bullard Abrasives, Inc.
Address	6 Carol Drive Lincoln, Rhode Island 02865
Phone:	800.227.4469
Fax:	401.333.3077
Recommended Use:	Cutting and/or Grinding
Restrictions On Use:	Dangerous, improper use may cause wheel breakage and serious injury. Do not abuse, over speed or drop wheel. Safe to use only if mounted, guarded and operated according to ANSI B7.1 and OSHA Regulations. Read safety tips in package. Always use a guard!

SECTION 2 - HAZARD(S) IDENTIFICATION

Hazard Status	This product Is classified as non-hazardous under OSHA Hazard Communication Standard, 29 CFR 1910.1200
Label elements	Not applicable
Pictograms	Not applicable
Description of Hazard(s):	Respiratory: Wheel dust is a respiratory irritant Skin: Wheel dust and fiberglass reinforcement is a skin irritant Ingestion: Acute product toxicity unknown Eyes: Wheel dust is an eye irritant Chronic: Potential chronic effects include skin sensitization and restricted breathing Wear respirator, eye protection and protective clothing when using product. Product will produce sparks and debris when in use, never use this product near reactive or flammable substances Never use product if it comes in contact with water
Supplemental Labeling:	Prolonged exposure to elevated noise levels during operations may affect hearing. A greater hazard, in most cases, is the exposure to the dust/fumes from the material or paint/coatings being ground. Most of the dust generated during grinding is from the base material being ground and the potential hazard from this exposure must be evaluated. This dust may present a fire or dust explosion hazard and may present a serious health hazard.

SECTION 3 - COMPOSITION

Chemical Name	Formula	CAS#	MAX % WT. **
Aluminum Oxide	Al_2O_3	1344-28-1	0 - 80
Silicon Carbide	SiC	409-21-2	0 - 75
Zirconium Oxide	ZrO_2	1314-23-4	0 - 75
Cured Phenolic Resin	N/A	N/A	10 - 30
Calcium Oxide	CaO	1305-78-8	0 - 10
Iron Pyrite	FeS_2	12068-85-8	0 - 20
Potassium Fluoborate	KBF_4	14075-53-7	0 - 10
Graphite	C	7782-42-5	0 - 5
Fluorspar	CaF_2	7789-75-5	0 - 10
Barium Sulfate	$BaSO_4$	7727-43-7	0 - 10
Calcium Carbonate	$CaCO_3$	471-34-1	0 - 10
Alkali Aluminum Fluorides	Various	60304-36-1 / 15096-52-3	0 - 15
Potassium Sulfate	K_2SO_4	7778-80-5	0 - 10
Fiberglass	N/A	65997-17-3	0 - 5

**The exact percentage (concentration) of the composition has been withheld as a trade secret.

SECTION 4 - FIRST-AID MEASURES

Required Treatment:

Eyes: Remove contact lenses if present. Flush eyes thoroughly with large amounts of water, holding eyelids open. If irritation persists, seek medical attention.

Skin: Wash skin with soap and water. If irritation or other symptoms develop, seek medical attention.

Ingestion: Do not induce vomiting. Rinse mouth with water. Seek medical attention if large amount is swallowed or if you feel unwell.

Inhalation: Move to fresh air. If breathing is difficult, have qualified personnel administer oxygen. Seek medical attention if irritation or other symptoms persist.

Symptoms – Effects, Acute Delayed:

Dust may cause eye and respiratory irritation. Prolonged inhalation of high concentration of dust may cause adverse effects on the lungs. Contains titanium dioxide. Prolonged overexposure to respirable dust may increase the risk of lung cancer. Risk of cancer depends on duration and level of exposure. Exposure to dust generated from processing the base material or coatings may present additional health hazards.

SECTION 5 - FIRE-FIGHTING MEASURES

Extinguishing Techniques including Equipment:

Use any media that is suitable for the surrounding fire. Do not use water on fires involving metals dusts. Us an appropriate dry powder.

Firefighters should wear full emergency equipment and NIOSH approved positive pressure self-contained breathing apparatus.

Chemical Hazards from Fire:

These products are not flammable or combustible; however, consideration must be given to the potential fire/explosion hazards from the base material being processed. Many materials create flammable/explosive dusts or turnings when machined or ground.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Emergency Procedures:	Environmental: Avoid contamination of water supplies and environmental releases. Report spills as required by authorities.
Protective Equipment:	Wear appropriate respirator and protective clothing as needed to avoid eye contact and inhalation of dust.
Methods of Containment and Clean-Up:	Collect dry material, avoiding creating airborne dust. Place in a suitable container for disposal.

SECTION 7 - HANDLING AND STORAGE

Handling:	Inspect wheel prior to mounting on machine for damage. Do not use at speeds greater than product maximum rates per minute (rpm) as indicated. Use with adequate ventilation. Avoid breathing dust. Avoid eye and skin contact with grinding dust. Wear suitable eye protection, gloves and appropriate protective clothing. Wash thoroughly after handling. Consider potential exposure to components of the base materials or coatings being ground or cut. Refer to OSHA substance specific standards for additional work practice requirements where applicable.
Storage:	No special storage required. Avoid excessive temperatures in storage. Store in a dry area.

SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION

Chemical Name	OSHA PEL respirable	OSHA PEL total dust	ACGIH TLV
Aluminum Oxide	5 mg/m³	15 mg/m³	10 mg/m³
Silicon Carbide	5 mg/m³	15mg/m³	3 mg/m³
Zirconium Oxide	5 mg/m³	N/A	10 mg/m³
Cured Phenolic Resin	None Established	None Established	None Established
Calcium Oxide	5 mg/m³	N/A	2 mg/m³
Iron Pyrite	None Established	None Established	None Established
Potassium Fluoborate	2.5 mg/m³	N/A	2.5 mg/m³
Graphite	5 mg/m³	15 mg/m³	2 mg/m³
Fluorspar	2.5 mg/m³	N/A	2.5 mg/m³
Barium Sulfate	5 mg/m³	15 mg/m³	5 mg/m³
Calcium Carbonate	5 mg/m³	10 mg/m³	10 mg/m³
Alkali Aluminum Fluorides	2.5 mg/m³	N/A	2.5 mg/m³
Potassium Sulfate	15 mg/m³	N/A	10 mg/m³
Fiberglass	5 mg/m³	15 mg/m³	5 mg/m³

Ventilation:	Engineering controls recommended. See ANSI Z43.1. Refer to OSHA 29 CFR 1910.94.
Respiratory:	OSHA/NIOSH approved respirator. See OSHA 29 CFR 1910.134
Eye Protection:	Protective eyewear such as safety goggles, safety glasses or face shield is recommended. See OSHA 29 CF1910.133.
Protective Gloves:	Leather gloves.
Hearing Protection:	Hearing protection such as earplugs or approved earmuffs. Refer to OSHA 29 CFR 1910.95.
Body/Skin Protection:	Leather apron, fire retardant jacket/shirt/lab coat to shield from heavy spark showers in operation.
Other Protections/Precautions:	Visually inspect all wheels before mounting for possible damage. Do not operate above maximum operating speed. Always use a guard. Refer to ANSI B7.1 for *Safety Requirements for the Use, Care and Protection of Abrasive Wheels*.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Dark colored, solid bonded wheel.	Solubility in water:	Insoluble
Odor:	None, faint phenolic odor	Boiling Point:	N/A
Flammability or Explosive Limits:	Not flammable	Flash Point:	Not flammable
Vapor Pressure:	N/A	Evaporation Rate:	N/A
Odor Threshold:	N/A	Flammability (solid, gas):	Not flammable
Vapor Density:	N/A	Auto-ignition Temperature:	N/A
pH:	N/A	Decomposition Temperature:	800 °F (425 °C)
Relative Density:	N/A	Viscosity:	N/A
Melting Point/Freezing Point:	N/A		

SECTION 10 - STABILITY AND REACTIVITY

Reactivity:	Not reactive under normal conditions of use and storage.
Chemical Stability:	Stable
Hazardous Polymerization:	Will not occur
Other:	Dust from grinding and cutting could contain potentially hazardous components of the base material being ground or coatings applied to the base material.

SECTION 11 - TOXICOLOGICAL INFORMATION

Chemical Name	Route of Exposure	Acute LD50
Aluminum Oxide	Oral	>10000 mg/kg (rat)
Silicon Carbide	Oral	>2000 mg/kg (rat)
Zirconium Oxide	Oral	>5000 mg/kg (rat)
Cured Phenolic Resin	N/A	No acute toxicity data available
Calcium Oxide	N/A	No acute toxicity data available
Iron Pyrite	N/A	No acute toxicity data available
Potassium Fluoborate	Oral	>5000 mg/kg (rat)
Graphite	Oral	>5000 mg/kg (rat)
Fluorspar	Oral	>4000 mg/kg (rat)
Barium Sulfate	Oral	>5000 mg/kg (rat)
Calcium Carbonate	Oral	>5000 mg/kg (rat)
Alkali Aluminum Fluorides	Oral	>5000 mg/kg (rat)
Potassium Sulfate	Oral	>5000 mg/kg (rat)
Fiberglass	N/A	No acute toxicity data available

Routes of Exposure:	Inhalation, skin contact, eye contact and ingestion
Related Symptoms:	Breathing in dust may cause irritation to the nose, throat and upper respiratory tract. May cause abrasive skin irritation. May cause eye irritation and injury. Not toxic if ingested. Swallowing may cause gastrointestinal disturbances or obstructions.
Acute and Chronic Effects:	Prolonged inhalation of respirable dust may cause adverse lung effects, including cancer. Smoking may aggravate chronic effects. Prolonged exposure to elevated noise levels during operations may affect hearing. In most cases, the greater hazard is the exposure to the dust/fumes from the material (paint/coatings) being cut and ground. Most of dust is generated during grinding and cutting of the base material and the potential hazard from this exposure must be evaluated.
Carcinogenicity:	Unknown
Mutagenicity:	Unknown
Reproductive Effects	Unknown

SECTION 12 - ECOLOGICAL INFORMATION*

Data from Toxicity Tests:	No adverse effects on aquatic organisms are expected.

SECTION 13 - DISPOSAL CONSIDERATIONS*

Proper Disposal Practices:	Disposal practices are in accordance with local, state and national regulations.

SECTION 14 - TRANSPORT INFORMATION*

Proper Transport of Hazard Material:	Not regulated as a hazardous material for transport.

SECTION 15 - REGULATORY INFORMATION*

Safety, Health and Environmental Regulations:	No Data Available

SECTION 16 - OTHER INFORMATION

Date SDS Prepared:	New SDS
Last Revision Completed:	May 12, 2015
Statement of Accuracy:	The above information is believed to be correct but does not propose to be all inclusive and shall be used only as a guide. Bullard Abrasives, Inc. shall not be held liable for any damage resulting from handling or from contact with the above products. This information relates only to the product designated herein and does not relate to its use in combination with any other material or process.

*Non-Mandatory

BASF
The Chemical Company

Safety Data Sheet
RHEOPEL PLUS

1. Product and Company Identification

Company
BASF CORPORATION
100 Park Avenue
Florham Park, NJ 07932, USA

24 Hour Emergency Response Information
CHEMTREC: 1-800-424-9300
BASF HOTLINE: 1-800-832-HELP (4357)

Chemical family: sealant

2. Hazards Identification

Emergency overview

WARNING:
MAY CAUSE EYE, SKIN AND RESPIRATORY TRACT IRRITATION
Evolution of flammable ethyl alcohol under influence of water or humid air.
Prolonged overexposure to ethanol has caused human birth defects.
Avoid contact with the skin, eyes and clothing
Wash thoroughly after handling
Keep container tightly closed

State of matter: liquid
Colour: off-white
Odour: mild, alcohol-like

Potential health effects

Primary routes of exposure:
Routes of entry for solids and liquids include eye and skin contact, ingestion and inhalation Routes of entry for gases include inhalation and eye contact Skin contact may be a route of entry for liquified gases.

Acute toxicity:
Ingestion may cause gastrointestinal disturbances The product has not been tested The statement has been derived from the properties of the individual components.

Irritation / corrosion:
May cause slight irritation to the eyes May cause slight irritation to the skin May cause slight irritation to the respiratory tract. The product has not been tested The statement has been derived from substances/products of a similar structure or composition.

Chronic toxicity:

Carcinogenicity: The chemical structure does not suggest a specific alert for such an effect.

Repeated dose toxicity: Overexposure may cause liver and kidney toxicity

Reproductive toxicity: The chemical structure does not suggest such an effect The product has not been tested The statement has been derived from the properties of the individual components.

Teratogenicity: The chemical structure does not suggest such an effect The product has not been tested The statement has been derived from the properties of the individual components.

Genotoxicity: The chemical structure does not suggest a specific alert for such an effect The product has not been tested The statement has been derived from the properties of the individual components

Potential environmental effects

Aquatic toxicity:
At the present state of knowledge, no negative ecological effects are expected There is a high probability that the product is not acutely harmful to aquatic organisms The product has not been tested The statement has been derived from substances/products of a similar structure or composition.

Bioaccumulation / bioconcentration:
Discharge into the environment must be avoided

3. Composition / Information on Ingredients

CAS Number	Content (W/W)	Chemical name
2943-75-1	>= 30.0 - <= 60.0 %	Triethoxycaprylylsilane
64-17-5	>= 0.1 - <= 1.0 %	Ethanol

4. First-Aid Measures

General advice:
First aid personnel should pay attention to their own safety. Remove contaminated clothing

If inhaled:
If difficulties occur after vapour/aerosol has been inhaled, remove to fresh air and seek medical attention

If on skin:
After contact with skin, wash immediately with plenty of water and soap If irritation develops, seek medical attention.

If in eyes:
Wash affected eyes for at least 15 minutes under running water with eyelids held open, consult an eye specialist

If swallowed:
Rinse mouth immediately and then drink plenty of water, seek medical attention Do not induce vomiting unless told to by a poison control center or doctor.

Note to physician

Treatment:	Treat according to symptoms (decontamination, vital functions), no known specific antidote

5. Fire-Fighting Measures

Flash point:	No flash point - Measurement made up to the boiling point

Suitable extinguishing media:
foam, water spray, dry powder, carbon dioxide

Unsuitable extinguishing media for safety reasons:
water jet

Hazards during fire-fighting:
carbon monoxide, carbon dioxide, harmful vapours, nitrogen oxides, fumes/smoke, carbon black

Protective equipment for fire-fighting:
Firefighters should be equipped with self-contained breathing apparatus and turn-out gear.

6. Accidental release measures

Personal precautions:
Use personal protective clothing. Do not breathe vapour/aerosol/spray mists. Sources of ignition should be kept well clear. Handle in accordance with good building materials hygiene and safety practice.

Environmental precautions:
Contain contaminated water/firefighting water. Do not discharge into drains/surface waters/groundwater

Cleanup:
For small amounts: Pick up with inert absorbent material (e.g. sand, earth etc.). Dispose of contaminated material as prescribed.
For large amounts: Pump off product.

7. Handling and Storage

Handling

General advice:
Avoid aerosol formation. Avoid inhalation of mists/vapours. Avoid skin contact. No special measures necessary provided product is used correctly

Protection against fire and explosion:
No special precautions necessary.

Storage

General advice:
Keep only in the original container in a cool, dry, well-ventilated place away from ignition sources, heat or flame. Store protected against freezing. Protect from direct sunlight. Keep container tightly closed

Temperature tolerance
Protect from temperatures below: 5 °C
Characteristics of the product are irreversibly changed below the limit temperature.
Protect from temperatures below: 40 °F
Protect from temperatures below: 0 °C
PROTECT FROM FREEZING DURING THE COLD-SEASON (BELOW 40°F / 5°C).

8. Exposure Controls and Personal Protection

Components with workplace control parameters

Ethanol	OSHA	PEL 1,000 ppm 1,900 mg/m3 ;
	ACGIH	STEL value 1,000 ppm ;

Personal protective equipment

Respiratory protection:
Wear respiratory protection if ventilation is inadequate. Wear a NIOSH-certified (or equivalent) respirator as necessary.

Hand protection:
Chemical resistant protective gloves

Eye protection:
Safety glasses with side-shields.

Body protection:
Body protection must be chosen based on level of activity and exposure.

General safety and hygiene measures:
In order to prevent contamination while handling, closed working clothes and working gloves should be used. Handle in accordance with good building materials hygiene and safety practice. When using, do not eat, drink or smoke. Hands and/or face should be washed before breaks and at the end of the shift. At the end of the shift the skin should be cleaned and skin-care agents applied. Gloves must be inspected regularly and prior to each use. Replace if necessary (e.g. pinhole leaks).

9. Physical and Chemical Properties

Form:	liquid	
Odour:	mild, alcohol-like	
Colour:	off-white	
pH value:	7 - 8	
Boiling point:	208 °F	
Density:	0 99 g/cm3	(20 °C)
Vapour density:		Heavier than air.
Solubility in water:		(20 °C) soluble

10. Stability and Reactivity

Conditions to avoid:
See MSDS section 7 - Handling and storage

Substances to avoid:
strong acids, strong bases strong oxidizing agents

Hazardous reactions:
The product is stable if stored and handled as prescribed/indicated.

Decomposition products:
No hazardous decomposition products if stored and handled as prescribed/indicated.

Thermal decomposition:
No decomposition if stored and handled as prescribed/indicated

Oxidizing properties:
Based on its structural properties the product is not classified as oxidizing.

11. Toxicological information

Reproductive toxicity

Information on: Ethanol
The potential to impair fertility cannot be excluded when given at high doses.

Significant overexposure during pregnancy may cause birth defects.

Development:

Information on: Ethanol
May cause birth defects and damage to reproductive system.
A teratogenic potential cannot be excluded.

Other Information:

Based on our experience and the information available, no adverse health effects are expected if handled as recommended with suitable precautions for designated uses. The product has not been tested The statements on toxicology have been derived from products of a similar structure and composition.

12. Ecological Information

Degradability / Persistence
Biological / Abiological Degradation

Evaluation: Inherently biodegradable.
The insoluble fraction can be removed by mechanical means in suitable waste water treatment plants.

Other adverse effects:

Ecological data are not available. Do not allow to enter soil, waterways or waste water channels

13. Disposal considerations

Waste disposal of substance:
Do not discharge into drains/surface waters/groundwater Dispose of in a licensed facility.

Container disposal:
Contaminated packaging should be emptied as far as possible; then it can be passed on for recycling after being thoroughly cleaned.

14. Transport Information

Land transport
USDOT

Not classified as a dangerous good under transport regulations

Sea transport
IMDG

Not classified as a dangerous good under transport regulations

Air transport
IATA/ICAO

Not classified as a dangerous good under transport regulations

15. Regulatory Information

Federal Regulations

Registration status:
Chemical TSCA, US released / listed

OSHA hazard category: Chronic target organ effects reported;

EPCRA 311/312 (Hazard categories): Acute;

CERCLA RQ	CAS Number	Chemical name
5000 LBS	64-19-7; 108-05-4	Acetic acid; vinyl acetate
1000 LBS	75-07-0	acetaldehyde
100 LBS	4170-30-3; 64-17-5	Crotonaldehyde; Ethanol

State regulations

CA Prop. 65:
THIS PRODUCT CONTAINS A CHEMICAL(S) KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER AND BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM.

16. Other Information

NFPA Hazard codes:
Health : 2 Fire: 1 Reactivity: 0 Special:

HMIS III rating
Health: 2¤ Flammability: 1 Physical hazard: 0

NFPA and HMIS use a numbering scale ranging from 0 to 4 to indicate the degree of hazard A value of zero means that the substance possesses essentially no hazard; a rating of four indicates extreme danger. Although similar, the two rating systems are intended for different purposes, and use different criteria The NFPA system was developed to provide an on-the-spot alert to the hazards of a material, and their severity, to emergency responders. The HMIS system was designed to communicate workplace hazard information to employees who handle hazardous chemicals.

We support worldwide Responsible Care® initiatives We value the health and safety of our employees, customers, suppliers and neighbors, and the protection of the environment. Our commitment to Responsible Care is integral to conducting our business and operating our facilities in a safe and environmentally responsible fashion, supporting our customers and suppliers in ensuring the safe and environmentally sound handling of our products, and minimizing the impact of our operations on society and the environment during production, storage, transport, use and disposal of our products.

MSDS Prepared by:
BASF NA Product Regulations
msds@basf.com

MSDS Prepared on: 2012/06/28

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END OF DATA SHEET

SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

PRODUCT

Product Name:RUBBER CONTROL JOINT (Thermoplastic Elastomer) Expansion Joints)
Product Description: Expansion Joints made from TPE
Intended Use: Expansion Joints used in construction applications. (This is a manufactured article that does not require a safety data sheet and is provided herein as a courtesy to customers. This is based on the raw material compound used in manufacturing.)

COMPANY IDENTIFICATION

Supplier: **WIRE-BOND**
400 ROuntree Road
Charlotte, NC 28217

Emergency Phone (800)-849-3776
Product Technical Information (800)-849-6722

SECTION 2 HAZARDS IDENTIFICATION

This material is hazardous according to regulatory guidelines (see (M)SDS Section 15).

CLASSIFICATION:

Combustible Dust

Hazard Statements:

May form combustible dust concentrations in air.

Other hazard information:

HAZARD NOT OTHERWISE CLASSIFIED (HNOC): None as defined under 29 CFR 1910.1200.

PHYSICAL / CHEMICAL HAZARDS

WARNING: May form combustible dust concentrations in air (during processing/handling). Thermal burn hazard - contact with hot material may cause thermal burns. Spilled pellets present a slipping hazard on hard surfaces.

HEALTH HAZARDS

If dust is generated, it could scratch the eyes and cause minor irritation to the respiratory tract. When heated, the vapors/fumes given off may cause respiratory tract irritation.

ENVIRONMENTAL HAZARDS

No significant hazards.

NFPA Hazard ID:	Health:	1	Flammability:	1	Reactivity:	1
HMIS Hazard ID:	Health:	1	Flammability:	1	Reactivity:	1

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

This material is defined as a mixture.

Hazardous Substance(s) or Complex Substance(s) required for disclosure

Name	CAS#	Concentration*	GHS Hazard Codes
AMORPHOUS SILICON DIOXIDE	112926-00-8	0 - 4%	None
CARBON BLACK	1333-86-4	0 - 6%	None
TIN DICHLORIDE	7772-99-8	0.14 - 0.45%	H302, H314(1), H400(M factor 1)
ZINC OXIDE	1314-13-2	0 - 0.7%	H400(M factor 1), H410(M factor 1)

* All concentrations are percent by weight unless material is a gas. Gas concentrations are in percent by volume.

NOTE: The product may contain varying levels of additives such as slip and antiblocking agents, antioxidants and stabilizers. The substances in the above table are components of one or more, but not all product grades.

As per paragraph (i) of 29 CFR 1910.1200, formulation is considered a trade secret and specific chemical identity and exact percentage (concentration) of composition may have been withheld. Specific chemical identity and exact percentage composition will be provided to health professionals, employees, or designated representatives in accordance with applicable provisions of paragraph (i).

SECTION 4 FIRST AID MEASURES

INHALATION

In case of adverse exposure to vapors and / or aerosols formed at elevated temperatures, immediately remove the affected victim from exposure. Administer artificial respiration if breathing is stopped. Keep at rest.

SKIN CONTACT

Wash contact areas with soap and water. For hot product: Immediately immerse in or flush affected area with large amounts of cold water to dissipate heat. Cover with clean cotton sheeting or gauze and get prompt medical attention.

EYE CONTACT

Flush thoroughly with water. If irritation occurs, get medical assistance.

INGESTION

First aid is normally not required. Seek medical attention if discomfort occurs.

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

Appropriate Extinguishing Media: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

Inappropriate Extinguishing Media: Straight Streams of Water

FIRE FIGHTING

Fire Fighting Instructions: Assure an extended cooling down period to prevent re-ignition. Evacuate area. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply. Firefighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

Unusual Fire Hazards: Explosion: Avoid generating dust; fine dust dispersed in air in sufficient concentration and in the presence of an ignition source is a potential dust explosion hazard.

Hazardous Combustion Products: Incomplete combustion products, Formaldehyde, Smoke, Fume, Oxides of carbon, Flammable hydrocarbons

FLAMMABILITY PROPERTIES

Flash Point [Method]: N/A
Flammable Limits (Approximate volume % in air): LEL: N/D UEL: N/D
Autoignition Temperature: N/A

SECTION 6 ACCIDENTAL RELEASE MEASURES

NOTIFICATION PROCEDURES

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations. US regulations require reporting releases of this material to the environment which exceed the applicable reportable quantity or oil spills which could reach any waterway including intermittent dry creeks. The National Response Center can be reached at (800)424-8802.

PROTECTIVE MEASURES

Avoid contact with spilled material. Dust Deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Avoid dispersal of dust in the air (for example, clearing dust surfaces with compressed air). Prevent dust exposure to ignition sources. For example, use non-sparking tools and prohibit smoking, flares, sparks or flames in immediate area. See Section 5 for firefighting information. See the Hazard Identification Section for Significant Hazards. See Section 4 for First Aid Advice. See Section 8 for advice on the minimum requirements for personal protective equipment. Additional protective measures may be necessary, depending on the specific circumstances and/or the expert judgment of the emergency responders.

SPILL MANAGEMENT

Land Spill: Not applicable
Water Spill: Retrieve from surface (product should float in water)

ENVIRONMENTAL PRECAUTIONS

Not applicable

SECTION 7 HANDLING AND STORAGE

HANDLING

Minimize dust generation and accumulationAvoid conditions generating heat during transfer operations.

Loading/Unloading Temperature: [Ambient]

Transport Temperature: [Ambient]
Transport Pressure: [Ambient]

Static Accumulator: This material is not a static accumulator.

STORAGE

Store in a cool, dry place. Do not store in open or unlabelled containers.
Storage Temperature: [Ambient]
Storage Pressure: [Ambient]

Suitable Containers/Packing: Bags (20/25kg); Boxes

Suitable Materials and Coatings (Chemical Compatibility): Aluminum; Polyethylene

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMIT VALUES

Exposure limits/standards (Note: Exposure limits are not additive)

Substance Name	Form	Limit / Standard			NOTE	Source
CARBON BLACK		TWA	3.5 mg/m3		N/A	OSHA Z1
CARBON BLACK	Inhalable fraction.	TWA	3 mg/m3		N/A	ACGIH
TIN DICHLORIDE [as Sn]		TWA	2 mg/m3		N/A	OSHA Z1
TIN DICHLORIDE [as Sn]		TWA	2 mg/m3		N/A	ACGIH
ZINC OXIDE	Fume.	TWA	5 mg/m3		N/A	OSHA Z1
ZINC OXIDE	Respirable fraction.	TWA	5 mg/m3		N/A	OSHA Z1
ZINC OXIDE	Total dust.	TWA	15 mg/m3		N/A	OSHA Z1
ZINC OXIDE	Respirable fraction.	STEL	10 mg/m3		N/A	ACGIH
ZINC OXIDE	Respirable fraction.	TWA	2 mg/m3		N/A	ACGIH

NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

No biological limits allocated.

ENGINEERING CONTROLS

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider:

If product is heated (as in recycling) , adequate ventilation should be provided so that exposure limits are not exceeded. SPECIAL PRECAUTIONS: Should significant vapors/fumes be generated during thermal processing of this product, it is recommended that work stations be monitored for the presence of thermal degradation by-products which may evolve at elevated temperatures (for example, oxygenated components). Processors of this product should assure that adequate ventilation or other controls are used to control exposure. It is recommended that the current ACGIH-TLVs for thermal degradation by-products be observed. Contact your local sales representative for further information. It is recommended that all dust control equipment such as local exhaust ventilation and material transport systems involved in handling of this product are designed and maintained to minimize dust generation and accumulation. Ensure that dust-handling systems (such as exhaust ducts, dusts collectors, vessels, and processing equipment) are designed to minimize the potential for dust ignition and prevent explosion propagation. For example, use explosion relief vents, an explosion suppression system or inert equipment internals. Additional examples of proper equipment include using only appropriately classified electrical equipment and powered industrial trucks.

PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

Respiratory Protection: If engineering controls do not maintain airborne contaminant concentrations at a

level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include:

Particulate air-purifying respirator approved for dust / oil mist is recommended.

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapor warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

Hand Protection:

If product is hot (as when being recycled), thermally protective, chemical resistant gloves are recommended. If contact with forearms is likely, wear gauntlet style gloves.

Eye Protection: When grinding product,, safety glasses with side shields are recommended.

Skin and Body Protection: None

.

Specific Hygiene Measures: None

ENVIRONMENTAL CONTROLS

Comply with applicable environmental regulations limiting discharge to air, water and soil. Protect the environment by applying appropriate control measures to prevent or limit emissions.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Note: Physical and chemical properties are provided for safety, health and environmental considerations only and may not fully represent product specifications. Contact the Supplier for additional information.

GENERAL INFORMATION

Physical State: Solid
Form: Pellet
Color: Natural or black (colorable)
Odor: Rubberlike
Odor Threshold: N/D

IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

Relative Density (at 20 °C): 0.9 - 1
Flammability (Solid, Gas): N/A
Flash Point [Method]: N/A
Flammable Limits (Approximate volume % in air): N/A
Boiling Point / Range: N/A
Decomposition Temperature: N/D
Vapor Density (Air = 1): N/A
Vapor Pressure: N/A
Evaporation Rate (n-butyl acetate = 1): N/A
pH: N/A
Solubility in Water: Negligible
Viscosity: N/A
Oxidizing Properties: See Hazards Identification Section.

OTHER INFORMATION

Freezing Point: N/D
Melting Point: 175°C (347°F) - 230°C (446°F) **Hygroscopic:** Yes
DMSO Extract (mineral oil only), IP-346: < 3 %wt

SECTION 10 STABILITY AND REACTIVITY

REACTIVITY: See sub-sections below.

STABILITY: Material is stable under normal conditions.

CONDITIONS TO AVOID: Avoid elevated temperatures for prolonged periods of time. Elevated temperatures. >260 ºC (500 ºF)

MATERIALS TO AVOID: Strong oxidizers, Halogenated compounds, Phenolic resins, Acetal resins

HAZARDOUS DECOMPOSITION PRODUCTS: Material does not decompose at ambient temperatures.

POSSIBILITY OF HAZARDOUS REACTIONS: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

INFORMATION ON TOXICOLOGICAL EFFECTS

This product is minimally toxic based on its polymeric structure.

OTHER INFORMATION

For the product itself:

Dust may be irritating to the eyes and respiratory tract. Elevated temperatures or mechanical action may form vapors, mists or fumes which may be irritating to the eyes and respiratory tract.

Contains:
Carbon black: Certain carbon blacks have proved carcinogenic in animal studies. Inhalation animal studies of high concentrations resulted in chronic inflammation, lung fibrosis and lung tumors. Epidemiology studies of workers include findings of bronchitis, pneumonia, emphysema and excess cancer. Substances bound in a polymer, such as is the case with this product, should present little or no hazard.
For additives that are encapsulated in the polymer: Under the normal conditions for processing and use of this polymer product the encapsulated additives are not expected to pose any health hazard. However, grinding of the polymer is not recommended without the use of appropriate measures to control exposure (see Section 8 - Engineering Controls).

The following ingredients are cited on the following lists:

Chemical Name	CAS Number	List Citations
CARBON BLACK	1333-86-4	IARC 2B

SECTION 12 ECOLOGICAL INFORMATION

The information given is based on data available for the material, the components of the material, and similar materials.

ECOTOXICITY

Material -- Not expected to be harmful to aquatic organisms.

MOBILITY

Material -- Low solubility and floats and is expected to migrate from water to the land. Expected to partition to sediment and wastewater solids.

PERSISTENCE AND DEGRADABILITY

Biodegradation:

Material -- Expected to be persistent.

NOTE: Material contains additives that are encapsulated in the polymer. Under normal conditions of processing and use the encapsulated additives are expected to have very limited solubility in water and, as a result, are not expected to cause adverse effects in the aquatic environment.

SECTION 13 DISPOSAL CONSIDERATIONS

Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

DISPOSAL RECOMMENDATIONS

Suitable routes of disposal are supervised incineration, preferentially with energy recovery, or appropriate recycling methods in accordance with applicable regulations and material characteristics at the time of disposal.

REGULATORY DISPOSAL INFORMATION

RCRA Information: The unused product, in our opinion, is not specifically listed by the EPA as a hazardous waste (40 CFR, Part 261D), nor is it formulated to contain materials which are listed as hazardous wastes. It does not exhibit the hazardous characteristics of ignitability, corrositivity or reactivity and is not formulated with contaminants as determined by the Toxicity Characteristic Leaching Procedure (TCLP). However, used product may be regulated.

SECTION 14 TRANSPORT INFORMATION

LAND (DOT): Not Regulated for Land Transport

LAND (TDG): Not Regulated for Land Transport

SEA (IMDG): Not Regulated for Sea Transport according to IMDG-Code

Marine Pollutant: No

AIR (IATA): Not Regulated for Air Transport

SECTION 15 REGULATORY INFORMATION

OSHA HAZARD COMMUNICATION STANDARD: This material is considered hazardous in accordance with OSHA HazCom 2012, 29 CFR 1910.1200.

Listed or exempt from listing/notification on the following chemical inventories: TSCA

EPCRA SECTION 302: This material contains no extremely hazardous substances.

CWA / OPA: not applicable

SARA (311/312) REPORTABLE HAZARD CATEGORIES: None.

SARA (313) TOXIC RELEASE INVENTORY: This product contains no chemicals subject to the supplier notification requirements of the SARA 313 Toxic Release Program.

REACH: This product has not been evaluated to determine its compliance with REACH regulations governing its use in EU countries. It is therefore assumed to be noncompliant.

RoHS: This product has not been evaluated to determine its compliance with RoHS regulations governing its use in EU countries. It is therefore assumed to be noncompliant.

The following ingredients are cited on the lists below:

Chemical Name	CAS Number	List Citations
AMORPHOUS SILICON DIOXIDE	112926-00-8	16, 17, 18
CARBON BLACK	1333-86-4	1, 4, 10, 13, 16, 17, 18
MAGNESIUM OXIDE	1309-48-4	1, 4, 13, 16, 17
OCTADECANOIC ACID, ZINC SALT (ZINC STEARATE)	557-05-1	15
ZINC OXIDE	1314-13-2	15

--REGULATORY LISTS SEARCHED--

1 = ACGIH ALL	6 = TSCA 5a2	11 = CA P65 REPRO	16 = MN RTK
2 = ACGIH A1	7 = TSCA 5e	12 = CA RTK	17 = NJ RTK
3 = ACGIH A2	8 = TSCA 6	13 = IL RTK	18 = PA RTK
4 = OSHA Z	9 = TSCA 12b	14 = LA RTK	19 = RI RTK
5 = TSCA 4	10 = CA P65 CARC	15 = MI 293	

Code key: CARC=Carcinogen; REPRO=Reproductive, RTK=Right to Know

SECTION 16 OTHER INFORMATION

This warning is given to comply with California Health and Safety Code 25249.6 and does not constitute an admission or a waiver of rights. This product contains a chemical known to the State of California to cause cancer.

N/D = Not determined, N/A = Not applicable

KEY TO THE H-CODES CONTAINED IN SECTION 3 OF THIS DOCUMENT (for information only):
H302: Harmful if swallowed; Acute Tox Oral, Cat 4
H314(1): Causes severe skin burns and eye damage; Skin Corr/Irritation, Cat 1
H400: Very toxic to aquatic life; Acute Env Tox, Cat 1
H410: Very toxic to aquatic life with long lasting effects; Chronic Env Tox, Cat 1

THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:

Updates made in accordance with implementation of GHS requirements.

THIS SDS COVERS THE FOLLOWING MATERIALS:

TPE Expansion Joints for use in construction,

The information and recommendations contained herein are, to the best of WIRE-BOND's knowledge and belief, accurate and reliable as of the date issued.

SAFETY DATA SHEET

This document is not intended for general distribution.
It can be used as the basis for a general distribution document if appropriate changes are made to the identification section.

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: RUST PENETRANT #95 Product Code:2906101

DISTRIBUTOR'S NAME: 1ST AYD CORPORATION
ADDRESS : 1325 GATEWAY DRIVE
ELGIN, IL 60124

EMERGENCY PHONE : 800-255-3924
INFORMATION PHONE : 847-622-0001

Product Use: Multi-purpose penetrating oil

2. HAZARDS IDENTIFICATION

CLASSIFICATION

Flammable aerosol	1
Gas under pressure	Liquefied gas
Skin Corrosion/Irritation	3
Eye Damage/Irritation	2B
Aspiration hazard	1



SIGNAL WORD: **Danger**

Hazard Statements

Extremely flammable aerosol
Contains gas under pressure; may explode if heated
May be fatal if swallowed and enters airways
Causes mild skin irritation
Causes eye irritation

Precautionary Statements

Keep away from heat/sparks/open flames/hot surfaces – No smoking
Do not spray on an open flame or other igntion source
Pressurized container – Do not pierce or burn, even after use
Wash hands thoroughly after handling
Do NOT induce vomiting
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing
If skin irritation occurs: Get medical advice/attention
If eye irritation persists: Get medical advice/attention
Store locked up
Protect from sunlight. Store in a well ventilated place
Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F
Dispose of contents/container to comply with all local, state, and federal regulations

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	Percent
PETROLEUM DISTILLATE, KEROSENE	8008-20-6	49.00
PETROLEUM OIL	64742-52-5	27.60
PETROLEUM DISTILLATES	64742-88-7	12.60
PROPANE	74-98-6	9.00
POLYDIMETHYLSILOXANE	63148-62-9	1.20

4. FIRST AID MEASURES

I**NHALATION:** Remove to fresh air. Administer oxygen if needed. Apply artificial respiration if breating has stopped. Get medical attention.

EYE CONTACT: Wash immediately with large volumes of fresh water for at least 15 minutes. Get medical attention.

SKIN CONTACT: Wipe off with a towel. Wash with soap and water. Get medical attention if irritation persists.

INGESTION: Not a likely route of exposure.

Most important symptoms/effects, acute and delayed: Repeated exposure may cause skin dryness or cracking. May cause drowsiness or dizziness.

Indication of immediate medical attention and special treatment needed: None known.

5. FIRE FIGHTING MEASURES

Suitable and unsuitable extinguising media: Foam, Alcohol foam, CO2, Dry chemical, Water fog. Water spray may be ineffective.

Specific hazards arising from the chemical: Closed containers may explode from internal pressure build-up when exposed to extreme heat and discharge contents. Liquid content of container will support combustion. Overexposure to decomposition products may cause a health hazard. Symptoms may not be readily apparent. Obtain medical attention. Hazardous decomposition products include carbon dioxide, carbon monoxide, and other toxic fumes.

Special equipment and precautions for fire-fighters: Water may be used to cool containers to prevent pressure build-up and explosion when exposed to extreme heat. Wear goggles and use self-contained breathing apparatus. If water is used, fog nozzles are preferred.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment, and emergency procedures: Avoid breathing vapors. Ventilate area. Remove all sources of ignition.

Methods and materials for containment and cleaning up: Clean up with absorbent material and place in closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling: Do not puncture or incinerate (burn) cans. Do not stick pins, nails, or any other sharp objects into opening on top of can. Do not spray in eyes. Do not take internally. See product label for additional information.

Conditions for safe storage, including any incompatibilities: Store and use in cool, dry, well-ventilated areas.

Do not store above 120 F.

8. EXPOSURE CONTROL/PERSONAL PROTECTION

Chemical Name / CAS No.	OSHA Exposure Limits	ACGIH Exposure Limits	Other Exposure Limits
PETROLEUM DISTILLATE, KEROSENE 8008-20-6			
PETROLEUM OIL 64742-52-5	PEL: Mist 5 mg/m3, 8 hrs	TLV: Mist 5 mg/m3, 8 hrs	
PETROLEUM DISTILLATES 64742-88-7			
PROPANE 74-98-6	Not established	TWA: 1000 ppm	
POLYDIMETHYLSILOXANE 63148-62-9	Not established	Not established	

Appropriate engineering controls: Ventilation should be sufficient to prevent inhalation of any vapors. General dilution and/or local exhoust ventilation in volume to keep PEL/TLV of most hazardous ingredient below acceptable limit and lel below stated limit.

Individual protection measures:

Respiratory protection: None under normal use. Avoid breathing vapors. In restricted areas , use approved chemical/mechanical filters designed to remove a combination or particles and vapor. In confined areas, use an approved air line respirator or hood. Self-contained breathing apparatus is required for vapor concentrations above PEL/TLV limits.

Protective gloves: None under normal use. Use solvent-resistant for prolonged or repeated contact.

Eye protection: None under normal use. However, use of safety glasses with splash guards or full face shield should be used if indicated.

Other protective clothing or equipment: None under normal use. However, use of solvent- resistant aprons or other clothing is recommended. Eye washes and safety showers in the workplace are recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Aerosol product	**Odor:**	Solvent
Vapor Pressure:	Not determined	**Odor threshold:**	Not determined
Vapor Density:	Heavier than air	**pH:**	Not applicable
Density:	0.782148296	**Melting point:**	Not determined
Freezing point:	Not determined	**Solubility:**	Not determined
Boiling point:	N/A	**Flash point:**	Not determined
Evaporation rate:	Slower than ether	**Flammability:**	Level 3 Aerosol
Explosive Limits:	Not applicable	**Partition coefficient (n-octanol/water):**	Not determined
Autoignition temperature:	Not determined	**Decomposition temperature:**	Not determined
Viscosity:	Not determined		

10. STABILITY AND REACTIVITY

Reactivity: Not reactive under normal conditions of use.

Chemical stability: Stable under normal storage and handling conditions.

Possibility of hazardous reactions: None known.

Incompatible materials:

Hazardous decomposition products:

11. TOXICOLOGICAL INFORMATION

Long-term toxicological studies have not been conducted for this product.

12. ECOLOGICAL INFORMATION

Long-term ecological studies have not been conducted for this product.

13. DISPOSAL CONSIDERATIONS

Dispose of in accordance with local, state, and federal regulations. Before attempting clean up, refer to other sections of this document for hazard cautionary information.

14. TRANSPORT INFORMATION

By land: DOT Proper Shipping Name: None required per 49 CFR 173.306(i) for products that conform to the Limited Quantity provisions. Commodity shipping description: Lubricant, NOI

By water: DOT & IMDG Proper Shipping Name: UN1950, Aerosols, 2.1, LTD QTY

By air: DOT & IATA Proper Shipping Name: UN1950, Aerosols, flammable, 2.1, LTD QTY (packing instruction Y203 applies)

15. REGULATORY INFORMATION

All ingredients are either listed on the TSCA inventory or are exempt.

16. OTHER INFORMATION

Date revised: 2015-06-18 Revision 0

Date Printed: 2015-06-18

THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED ACCURATE. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF. BECAUSE THE INFORMATION CONTAINED HEREIN MAY BE APPLIED UNDER CONDITIONS BEYOND OUR CONTROL, WE ASSUME NO RESPONSIBILITY FOR ITS USE.

CITGO CITGARD® SynDurance™ Synthetic Blend Motor Oil, SAE 5W-40

Material Safety Data Sheet

CITGO Petroleum Corporation
P.O. Box 4689
Houston, TX 77210

MSDS No. 622671001
Revision Date 1/4/2006

IMPORTANT: Read this MSDS before handling or disposing of this product and pass this information on to employees, customers and users of this product.

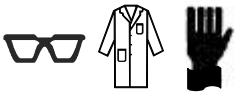
Hazard Rankings

	HMIS	NFPA
Health Hazard	1	1
Fire Hazard	1	1
Reactivity	0	0

*** = Chronic Health Hazard**

Protective Equipment

Minimum Recommended
See Section 8 for Details



Emergency Overview

Physical State Liquid.
Color Amber. **Odor** Mild petroleum odor

CAUTION:
Hot oil can cause thermal burns on contact.
"Used" motor oil has been associated with skin cancer in laboratory animals following extended contact.
Spills may create a slipping hazard.

SECTION 1. PRODUCT IDENTIFICATION

Trade Name	CITGO CITGARD® SynDurance™ Synthetic Blend Motor Oil, SAE 5W-40	**Technical Contact**	(800) 248-4684
Product Number	622671001	**Medical Emergency**	(832) 486-4700
CAS Number	Mixture.	**CHEMTREC Emergency (United States Only)**	(800) 424-9300
Product Family	Heavy duty motor oil		
Synonyms	Motor oil; CITGO® Material Code No.: 622671001		

SECTION 2. COMPOSITION

Component Name(s)	CAS Registry No.	Concentration (%)
Distillates, petroleum, solvent-refined heavy paraffinic	64741-88-4	30 - 50
Distillates, petroleum, hydrotreated heavy paraffinic	64742-54-7	10 - 30
1-Decene homopolymer, hydrogenated	68037-01-4	5 - 30
1-Decene trimer, hydrogenated	68649-12-7	5 - 30
Proprietary Ingredients	Proprietary Mixture	<10
Phosphorodithioic acid, O,O-di-C1-14-alkyl esters, zinc salts	68649-42-3	<2

SECTION 3. HAZARDS IDENTIFICATION

Also see Emergency Overview and Hazard Ratings on the top of Page 1 of this MSDS.

Major Route(s) of Entry Skin contact.

Signs and Symptoms of Acute Exposure

Inhalation	At elevated temperatures or in enclosed spaces, product mist or vapors may irritate the mucous membranes of the nose, the throat, bronchi, and lungs.
Eye Contact	This product can cause transient mild eye irritation with short-term contact with liquid sprays or mists. Symptoms include stinging, watering, redness, and swelling.
Skin Contact	This product can cause mild, transient skin irritation with short-term exposure. Skin contact with hot material may result in severe burns.
Ingestion	If swallowed, this material can cause a laxative effect.
Chronic Health Effects Summary	This product contains a petroleum-based mineral oil. Prolonged or repeated skin contact can cause mild irritation and inflammation characterized by drying, cracking, (dermatitis) or oil acne. Repeated or prolonged inhalation of petroleum-based mineral oil mists at concentrations above applicable workplace exposure levels can cause respiratory irritation or other pulmonary effects.
Conditions Aggravated by Exposure	Disorders of the following organs or organ systems that may be aggravated by significant exposure to this material or its components include: Skin
Target Organs	May cause damage to the following organs: skin.
Carcinogenic Potential	This product is not known to contain any components at concentrations above 0.1% which are considered carcinogenic by OSHA, IARC or NTP.

OSHA Hazard Classification is indicated by an "X" in the box adjacent to the hazard title. If no "X" is present, the product does not exhibit the hazard as defined in the OSHA Hazard Communication Standard (29 CFR 1910.1200).

OSHA Health Hazard Classification				OSHA Physical Hazard Classification					
Irritant		**Sensitizer**		**Combustible**		**Explosive**		**Pyrophoric**	
Toxic		**Highly Toxic**		**Flammable**		**Oxidizer**		**Water-reactive**	
Corrosive		**Carcinogenic**		**Compressed Gas**		**Organic Peroxide**		**Unstable**	

SECTION 4. FIRST AID MEASURES

Take proper precautions to ensure your own health and safety before attempting rescue or providing first aid. For more specific information, refer to Exposure Controls and Personal Protection in Section 8 of this MSDS.

Inhalation	Vaporization is not expected at ambient temperatures. This material is not expected to cause inhalation-related disorders under anticipated conditions of use. In case of overexposure, move the person to fresh air.
Eye Contact	Check for and remove contact lenses. Flush eyes with cool, clean, low-pressure water while occasionally lifting and lowering eyelids. Seek medical attention if excessive tearing, redness, or pain persists.

Skin Contact	If burned by hot material, cool skin by quenching with large amounts of cool water. For contact with product at ambient temperatures, remove contaminated shoes and clothing. Wipe off excess material. Wash exposed skin with mild soap and water. Seek medical attention if tissue appears damaged or if pain or irritation persists. Thoroughly clean contaminated clothing before reuse. Discard contaminated leather goods. If material is injected under the skin, seek medical attention immediately.
Ingestion	Do not induce vomiting unless directed to by a physician. Do not give anything to drink unless directed to by a physician. Never give anything by mouth to a person who is not fully conscious. Seek medical attention immediately.
Notes to Physician	INGESTION: The viscosity range of the product(s) represented by this MSDS is greater than 100 SUS at 100°F. There is a low risk of aspiration upon ingestion Careful gastric lavage or emesis may be considered to evacuate large quantities of material.

SECTION 5. FIRE FIGHTING MEASURES

NFPA Flammability Classification	NFPA Class-IIIB combustible material.
Flash Point	Open cup: 228°C (442°F) (Cleveland.).
Lower Flammable Limit	No data. **Upper Flammable Limit** No data.
Autoignition Temperature	Not available.
Hazardous Combustion Products	Carbon dioxide, carbon monoxide, smoke, fumes, unburned hydrocarbons and oxides of sulfur, phosphorus, zinc and/or nitrogen.
Special Properties	This material can burn but will not readily ignite. This material will release vapors when heated above the flash point temperature that can ignite when exposed to a source of ignition. In enclosed spaces, heated vapor can ignite with explosive force. Mists or sprays may burn at temperatures below the flash point.
Extinguishing Media	Use dry chemical, foam, Carbon Dioxide or water fog. Water or foam may cause frothing. Carbon dioxide and inert gas can displace oxygen. Use caution when applying carbon dioxide or inert gas in confined spaces.
Protection of Fire Fighters	Firefighters must use full bunker gear including NIOSH-approved positive pressure self-contained breathing apparatus to protect against potential hazardous combustion or decomposition products and oxygen deficiencies.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Take proper precautions to ensure your own health and safety before attempting spill control or clean-up. For more specific information, refer to the Emergency Overview on Page 1, Exposure Controls and Personal Protection in Section 8 and Disposal Considerations in Section 13 of this MSDS.

Do not touch damaged containers or spilled material unless wearing appropriate protective equipment. Slipping hazard; do not walk through spilled material. Stop leak if you can do so without risk. For small spills, absorb or cover with dry earth, sand, or other inert non-combustible absorbent material and place into waste containers for later disposal. Contain large spills to maximize product recovery or disposal. Prevent entry into waterways or sewers. In urban area, cleanup spill as soon as possible. In natural environments, seek cleanup advice from specialists to minimize physical habitat damage. This material will float on water. Absorbent pads and similar materials can be used. Comply with all laws and regulations.

SECTION 7. HANDLING AND STORAGE

Handling

Avoid contamination and extreme temperatures to minimize product degradation. Empty containers may contain product residues that can ignite with explosive force. Do not pressurize, cut, weld, braze solder, drill, grind or expose containers to flames, sparks, heat or other potential ignition sources. Consult appropriate federal, state and local authorities before reusing, reconditioning, reclaiming, recycling or disposing of empty containers and/or waste residues of this product.

Storage

Keep container closed. Do not store with strong oxidizing agents. Do not store at elevated temperatures. Avoid storing product in direct sunlight for extended periods of time. Consult appropriate federal, state and local authorities before reusing, reconditioning, reclaiming, recycling or disposing of empty containers or waste residues of this product.

SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Engineering Controls

Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of mists and/or vapors below the recommended exposure limits (see below). An eye wash station and safety shower should be located near the work-station.

Personal Protective Equipment

Personal protective equipment should be selected based upon the conditions under which this material is used. A hazard assessment of the work area for PPE requirements should be conducted by a qualified professional pursuant to OSHA regulations. The following pictograms represent the minimum requirements for personal protective equipment. For certain operations, additional PPE may be required.



Eye Protection

Safety glasses equipped with side shields are recommended as minimum protection in industrial settings. Wear goggles if splashing or spraying is anticipated. Wear goggles and face shield if material is heated above 125°F (51°C). Have suitable eye wash water available.

Hand Protection

Use gloves constructed of chemical resistant materials such as heavy nitrile rubber if frequent or prolonged contact is expected. Use heat-protective gloves when handling product at elevated temperatures.

Body Protection

Avoid prolonged and/or repeated skin contact. Use clean protective clothing if splashing or spraying conditions are present. Protective clothing should include long-sleeves, apron, boots and additional facial protection. Remove oil contaminated clothing. Launder oil contaminated clothing before reusing. Contaminated leather goods should be removed promptly and discarded.

Respiratory Protection

The need for respiratory protection is not anticipated under normal use conditions and with adequate ventilation. If elevated airborne concentrations above applicable workplace exposure levels are anticipated, a NIOSH-approved organic vapor respirator equipped with a dust/mist prefilter should be used. Protection factors vary depending upon the type of respirator used. Respirators should be used in accordance with OSHA requirements (29 CFR 1910.134).

General Comments Use good personal hygiene practices. Wash hands and other exposed skin areas with plenty of mild soap and water before eating, drinking, smoking, use of toilet facilities, or leaving work. DO NOT use gasoline, kerosene, solvents or harsh abrasives as skin cleaners. Since specific exposure standards/control limits have not been established for this product, the "Oil Mist, Mineral" exposure limits shown below are suggested as minimum control guidelines.

Occupational Exposure Guidelines

Substance	Applicable Workplace Exposure Levels
Oil Mist, Mineral	**ACGIH (United States).** TWA: 5 mg/m^3 8 hour(s). STEL: 10 mg/m^3 15 minute(s). **OSHA (United States).** TWA: 5 mg/m^3 8 hour(s).

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES (TYPICAL)

Physical State	Liquid.	**Color**	Amber.	**Odor**	Mild petroleum odor
Specific Gravity	0.86 (Water = 1)	**pH**	Not Applicable.	**Vapor Density**	>1 (Air = 1)
Boiling Range	Not available.			**Melting/Freezing Point**	Not available.
Vapor Pressure	<0.001 kPa (<0.01 mm Hg) (at 20°C)			**Volatility**	Negligible volatility.
Solubility in Water	Negligible solubility in cold water.			**Viscosity (cSt @ 40°C)**	104

Flash Point Open cup: 228°C (442°F) (Cleveland.).

Additional Properties Gravity, ºAPI (ASTM D287) = 33.4 @ 60º F
Density = 7.15 Lbs/gal.
Viscosity (ASTM D2161) = AP 520 SUS @ 100º F

SECTION 10. STABILITY AND REACTIVITY

Chemical Stability Stable. **Hazardous Polymerization** Not expected to occur.

Conditions to Avoid Keep away from extreme heat, sparks, open flame, and strongly oxidizing conditions.

Materials Incompatibility Strong oxidizers.

Hazardous Decomposition Products No additional hazardous decomposition products were identified other than the combustion products identified in Section 5 of this MSDS.

SECTION 11. TOXICOLOGICAL INFORMATION

For other health-related information, refer to the Emergency Overview on Page 1 and the Hazards Identification in Section 3 of this MSDS.

Toxicity Data

Distillates, petroleum, solvent-refined heavy paraffinic :
ORAL (LD50): Acute: >5000 mg/kg [Rat].
DERMAL (LD50): Acute: >2000 mg/kg [Rabbit].

Mineral oil mists derived from highly refined oils are reported to have low acute and sub-acute toxicities in animals. Effects from single and short-term repeated exposures to high concentrations of mineral oil mists well above applicable workplace exposure levels include lung inflammatory reaction, lipoid granuloma formation and lipoid pneumonia. In acute and sub-acute studies involving exposures to lower concentrations of mineral oil mists at or near current work place exposure levels produced no significant toxicological effects. In long term studies (up to two years) no carcinogenic effects have been reported in any animal species tested. Analyses conducted by method IP 346 indicate that the concentration of DMSO extractables in this mineral oil is below 3.0 weight percent.

Distillates, petroleum, hydrotreated heavy paraffinic:
ORAL (LD50): Acute: >5000 mg/kg [Rat].
DERMAL (LD50): Acute: >2000 mg/kg [Rabbit].

Mineral oil mists derived from highly refined oils are reported to have low acute and sub-acute toxicities in animals. Effects from single and short-term repeated exposures to high concentrations of mineral oil mists well above applicable workplace exposure levels include lung inflammatory reaction, lipoid granuloma formation and lipoid pneumonia. In acute and sub-acute studies involving exposures to lower concentrations of mineral oil mists at or near current work place exposure levels produced no significant toxicological effects. In long term studies (up to two years) no carcinogenic effects have been reported in any animal species tested.

1-Decene homopolymer, hydrogenated:
ORAL (LD50): Acute: >2000 mg/kg [Rat].
DERMAL (LD50): Acute: >2000 mg/kg [Rabbit].

Practically non-irritating to eyes. Practically non-irritating to the skin.

Phosphorodithioic acid, O,O-di-C1-14-alkyl esters, zinc salts:
ORAL (LD50): Acute: >2000 mg/kg [Rabbit]. >2890 mg/kg [Rat].
DERMAL (LD50): Acute: >2000 mg/kg [Rabbit].

INHALATION (LC50), Acute: > 1310 mg/L (Rat screen level)(4 hours).
DRAIZE EYE, Acute: Moderate to severe eye irritant. (Rabbit).
DRAIZE DERMAL, Acute: Mild to moderate skin irritant. (Rabbit).
BUEHLER DERMAL, Acute: Non-sensitizing. (Guinea Pig).
28-Day DERMAL, Sub-Chronic: Severe skin irritant. (Rabbit). Reported reduced food consumption resulting in weight loss and testicular atrophy.

Engine oil:
Used motor oil was associated with cancer in lifetime skin painting studies with laboratory animals. Avoid prolonged or repeated contact with used motor oil. Use of good hygiene practices will reduce the liklihood of potential health effects.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Analysis for ecological effects has not been conducted on this product. However, if spilled, this product and any contaminated soil or water may be harmful to human, animal, and aquatic life. Also, the coating action associated with petroleum and petroleum products can be harmful or fatal to aquatic life and waterfowl.

Environmental Fate

An environmental fate analysis is not available for this specific product. Plants and animals may experience harmful or fatal effects when coated with petroleum products. Petroleum-based (mineral) lubricating oils normally will float on water. In stagnant or slow-flowing waterways, an oil layer can cover a large surface area. As a result, this oil layer might limit or eliminate natural atmospheric oxygen transport into the water. With time, if not removed, oxygen depletion in the waterway may be sufficient to cause a fish kill or create an anaerobic environment. This material contains phosphorus which is a controlled element for disposal in effluent waters in most sections of North America. Phosphorus is known to enhance the formation of algae. Severe algae growth can reduce oxygen content in the water possibly below levels necessary to support marine life.

SECTION 13. DISPOSAL CONSIDERATIONS

Hazard characteristic and regulatory waste stream classification can change with product use. Accordingly, it is the responsibility of the user to determine the proper storage, transportation, treatment and/or disposal methodologies for spent materials and residues at the time of disposition.

Conditions of use may cause this material to become a "hazardous waste", as defined by federal or state regulations. It is the responsibility of the user to determine if the material is a "hazardous waste" at the time of disposal. Transportation, treatment, storage, and disposal of waste material must be conducted in accordance with RCRA regulations (see 40 CFR 260 through 40 CFR 271). State and/or local regulations may be more restrictive. Contact your regional US EPA office for guidance concerning case specific disposal issues. Empty drums and pails retain residue. DO NOT pressurize, cut, weld, braze, solder, drill, grind, or expose this product's empty container to heat, flame, or other ignition sources. DO NOT attempt to clean it. Empty drums and pails should be drained completely, properly bunged or sealed, and promptly sent to a reconditioner.

SECTION 14. TRANSPORT INFORMATION

The shipping description below may not represent requirements for all modes of transportation, shipping methods or locations outside of the United States.

US DOT Status Not regulated by the U.S. Department of Transportation as a hazardous material.

Proper Shipping Name Not regulated.

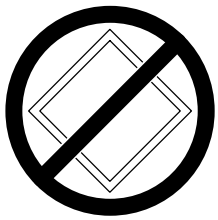
Hazard Class Not regulated.

Packing Group(s) Not applicable.

UN/NA Number Not regulated.

Reportable Quantity A Reportable Quantity (RQ) has not been established for this material.

Placard(s)



Emergency Response Guide No. Not applicable.

MARPOL III Status Not a DOT "Marine Pollutant" per 49 CFR 171.8.

SECTION 15. REGULATORY INFORMATION

TSCA Inventory	This product and/or its components are listed on the Toxic Substances Control Act (TSCA) inventory.
SARA 302/304 Emergency Planning and Notification	The Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires facilities subject to Subparts 302 and 304 to submit emergency planning and notification information based on Threshold Planning Quantities (TPQs) and Reportable Quantities (RQs) for "Extremely Hazardous Substances" listed in 40 CFR 302.4 and 40 CFR 355. No components were identified.
SARA 311/312 Hazard Identification	The Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires facilities subject to this subpart to submit aggregate information on chemicals by "Hazard Category" as defined in 40 CFR 370.2. This material would be classified under the following hazard categories: No SARA 311/312 hazard categories identified.
SARA 313 Toxic Chemical Notification and Release Reporting	This product contains the following components in concentrations above de minimis levels that are listed as toxic chemicals in 40 CFR Part 372 pursuant to the requirements of Section 313 of SARA: Zinc and Zinc Compounds, Concentration: <2%
CERCLA	The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) requires notification of the National Response Center concerning release of quantities of "hazardous substances" equal to or greater than the reportable quantities (RQ's) listed in 40 CFR 302.4. As defined by CERCLA, the term "hazardous substance" does not include petroleum, including crude oil or any fraction thereof which is not otherwise specifically designated in 40 CFR 302.4. Chemical substances present in this product or refinery stream that may be subject to this statute are: Zinc and Zinc Compounds, Concentration: <2%
Clean Water Act (CWA)	This material is classified as an oil under Section 311 of the Clean Water Act (CWA) and the Oil Pollution Act of 1990 (OPA). Discharges or spills which produce a visible sheen on waters of the United States, their adjoining shorelines, or into conduits leading to surface waters must be reported to the EPA's National Response Center at (800) 424-8802.
California Proposition 65	This material may contain the following components which are known to the State of California to cause cancer, birth defects or other reproductive harm, and may be subject to the requirements of California Proposition 65 (CA Health & Safety Code Section 25249.5): Toluene: <0.001%
New Jersey Right-to-Know Label	Motor oil
Additional Regulatory Remarks	No additional regulatory remarks.

SECTION 16. OTHER INFORMATION

Refer to the top of Page 1 for the HMIS and NFPA Hazard Ratings for this product.

REVISION INFORMATION

Version Number	3.1
Revision Date	1/4/2006
Print Date	Printed on 1/4/2006.

ABBREVIATIONS

AP: Approximately EQ: Equal >: Greater Than <: Less Than NA: Not Applicable ND: No Data NE: Not Established

ACGIH: American Conference of Governmental Industrial Hygienists
AIHA: American Industrial Hygiene Association
IARC: International Agency for Research on Cancer
NTP: National Toxicology Program
NIOSH: National Institute of Occupational Safety and Health
OSHA: Occupational Safety and Health Administration
NPCA: National Paint and Coating Manufacturers Association
HMIS: Hazardous Materials Information System
NFPA: National Fire Protection Association
EPA: US Environmental Protection Agency

DISCLAIMER OF LIABILITY

THE INFORMATION IN THIS MSDS WAS OBTAINED FROM SOURCES WHICH WE BELIEVE ARE RELIABLE. HOWEVER, THE INFORMATION IS PROVIDED WITHOUT ANY WARRANTY, EXPRESSED OR IMPLIED REGARDING ITS CORRECTNESS. SOME INFORMATION PRESENTED AND CONCLUSIONS DRAWN HEREIN ARE FROM SOURCES OTHER THAN DIRECT TEST DATA ON THE SUBSTANCE ITSELF. THIS MSDS WAS PREPARED AND IS TO BE USED ONLY FOR THIS PRODUCT. IF THE PRODUCT IS USED AS A COMPONENT IN ANOTHER PRODUCT, THIS MSDS INFORMATION MAY NOT BE APPLICABLE. USERS SHOULD MAKE THEIR OWN INVESTIGATIONS TO DETERMINE THE SUITABILITY OF THE INFORMATION OR PRODUCTS FOR THEIR PARTICULAR PURPOSE.

THE CONDITIONS OR METHODS OF HANDLING, STORAGE, USE, AND DISPOSAL OF THE PRODUCT ARE BEYOND OUR CONTROL AND MAY BE BEYOND OUR KNOWLEDGE. FOR THIS AND OTHER REASONS, WE DO NOT ASSUME RESPONSIBILITY AND EXPRESSLY DISCLAIM LIABILITY FOR LOSS, DAMAGE OR EXPENSE ARISING OUT OF OR IN ANY WAY CONNECTED WITH HANDLING, STORAGE, USE OR DISPOSAL OF THE PRODUCT.

* * * * * END OF MSDS * * * * *

MATERIAL SAFETY DATA SHEET

Product name:	**Safety Boosters**
Description:	22, 25, and 27 caliber blank cartridges for powder actuated fastening tools
Supplier:	Hilti, Inc. P.O. Box 21148, Tulsa, OK 74121; phone 1800 879 8000
Emergency # (Chem-Trec.):	1 800 424 9300 (USA, PR, Virgin Islands, Canada); 001 703 527 3887 (other countries)

INGREDIENTS AND EXPOSURE LIMITS

Ingredients:	CAS Number:	TLV:	PEL:	STEL:
Nitroglycerin	00055-63-0	0.46 mg/m^3 (S)	NE	2 mg/m^3 (S)
Nitrocellulose	09004-70-0	NE	NE	NE
Lead styphnate	15245-44-0	0.05 mg/m^3 *	0.05 mg/m^3 *	NE
Barium nitrate	10022-31-8	0.5 mg/m^3	0.5 mg/m^3	NE
Tetracene	00109-27-3	NE	NE	NE

Abbreviations / Symbols: * exposure limit for metallic lead. **NE** = None Established. **NA** = Not Applicable. **(S)** indicates exposure should be controlled for the cutaneous routes including the mucous membranes, eyes, and skin. Airborne exposures as well as direct contact must be considered.

PHYSICAL DATA

Appearance:	Blank brass cartridges.	**Odor:**	None.
Vapor Density: (air = 1)	Not applicable.	**Vapor Pressure:**	Not applicable.
Boiling Point:	Not applicable.	**VOC Content:**	Not applicable.
Evaporation Rate:	Not applicable.	**Solubility in Water:**	Not applicable.
Specific Gravity:	Not applicable.	**pH:**	Not applicable.

FIRE AND EXPLOSION HAZARD DATA

Flash Point:	Not applicable.	**Flammable Limits:**	Not applicable.
Extinguishing Media:	Water.		
Special Fire Fighting Procedures:	Flood area with water or keep cartridges cool with water spray.		
Unusual Fire and Explosion Hazards:	Cartridges can blast if exposed to temperatures > 160ºC. Mass detonation will not occur.		

REACTIVITY DATA

Hazardous Polymerization:	Will not occur.	**Stability:**	Stable.
Incompatibility:	Strong acids and oxidizing agents.		
Decomposition Products:	Oxides of nitrogen, oxides of carbon, acrid fumes and lead oxide.		
Conditions to Avoid:	Acids, excessive heat, crushing, and electrical currents.		

HEALTH HAZARD DATA

Known Hazards:	OSHA has established an action level of 0.03 mg/m^3 for lead. Exposures that exceed recommended limits for lead may be possible under certain conditions such as excessive firing with little air movement and/or firing in small enclosed work areas. Chronic (long-term) overexposure to lead can result in damage to blood-forming, nervous, urinary and reproductive systems.
Signs and Symptoms of Exposure:	Excessive exposure to gases might cause irritation to the eyes, skin, and respiratory system. Adverse health effects are not expected from acute exposure to fumes and gases; however, adequate ventilation, personal protective equipment, and/or good personal hygiene practices are essential to keep exposure to a minimum.
Routes of Exposure:	Dermal. Inhalation.
Carcinogenicity:	Organic lead compounds are not classified by IARC or NTP as carcinogens. Lead styphnate is converted to metallic lead and lead oxide during combustion. Metallic lead and lead oxide have not been tested adequately.
Medical Conditions Aggravated by Exposure:	None anticipated.

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EMERGENCY AND FIRST AID PROCEDURES	
Eyes:	If irritation occurs, flush with plenty of water. Consult a physician if symptoms persist.
Skin:	Practice good hygiene; i.e. wash with soap and water after using and before smoking/eating.
Inhalation:	Move victim to fresh air. Get medical attention if symptoms persist.
Ingestion:	Get immediate medical attention.
Other:	Referral to a physician is recommended if there is any question about the seriusness of the injury/exposure.
CONTROL MEASURES AND PERSONAL PROTECTIVE EQUIPMENT	
Ventilation:	General (i.e., natural or mechanically induced fresh air movements that maintain vapor concentrations below recommended exposure limits).
Eye Protection:	Suitable safety glasses with side-shields, or safety goggles.
Skin Protection:	Cleaning powder actuated tools can result in some exposure to lead compounds. Impermeable gloves are recommended. Wash hands thoroughly when finished and before eating or smoking.
Respiratory Protection:	Not normally required. Where air movement is inadequate to maintain exposure below recommended levels, wear a high efficiency particulate respirator.
Other:	Hearing protection should be worn when firing powder actuated tools
PRECAUTIONS FOR SAFE HANDLING AND USE	
Handling and Storing Precautions:	Store in a cool dry place. Do not crush or drop. Keep away from excessive heat , electrical current, strong acids and oxidizers. NFPA 495 requires 15 feet separation (or 1-hour firewall) from flammable liquids, flammable solids, and oxidizers. For industrial use only. Keep out of reach of children. Use with adequate ventilation. Practice good hygiene; i.e. wash after using and before eating or smoking.
Other Precautions::	Use only in powder actuated tools designed to handle these boosters. Construction industry employees must be properly trained as prescribed by OSHA regulations 29 CFR 1926.302 (e). All employees should be familiar with the safe operating procedures and requirements for powder operated tools as described in ANSI A10.3 and OSHA 29 CFR 1910.243 (d).
REGULATORY INFORMATION	
Hazard Communication:	This MSDS has been prepared in accordance with the federal OSHA Hazard Communication Standard 29 CFR 1910.1200.
HMIS Codes:	Health 1, Flammability 1, Reactivity 3, PPE B (Glasses, Gloves)
DOT Shipping Name:	Limited Quantity - LQ
ICAO / IATA Shipping Name:	Cartridges. Power device, Class 1.4S, UN 0323
TSCA Inventory Status:	Chemical components listed on TSCA inventory.
SARA Title III, Section 313:	This product contains < 1% lead styphnate (CAS No. 15245-44-0), < 0.1% barium nitrate (CAS No. 10022-31-8), and 5 - 11% nitroglycerin (CAS No. 55-63-0) which are subject to the reporting according to Section 313 of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR part 372.
Waste Disposal Methods:	Misfires should be stored in a closed container until disposal or as otherwise required by local, state, and federal safety, health and environmental regulations. The recommended disposal method is an explosives incinerator.
EPA Waste Code(s):	D008
CONTACTS	
Customer Service:	1 800 879 8000
Technical Service:	1 800 879 8000
Health / Safety:	1 800 879 6000 Jerry Metcalf (x1003704)
Emergency # (Chem-Trec):	1 800 424 9300 (USA, PR, Virgin Islands, Canada); 001 703 527 3887 (other countries)

The information and recommendations contained herein are based upon data believed to be correct; however, no guarantee or warranty of any kind expressed or implied is made with respect to the information provided.

Sakrete Fast Setting Cement Patcher/Sakrete Leak Stopper Hydraulic Cement (Gray)

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012

Date of issue: 01/17/2014 Revision date: 02/24/2016 Version: 1.1

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture

Product name : Sakrete Fast Setting Cement Patcher

Sakrete Leak Stopper Hydraulic Cement (Gray)

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Various.

1.3. Details of the supplier of the safety data sheet

Sakrete Of North America
625 Griffith Rd., Ste 100
Charlotte, NC 28217 - USA
T 866-725-7383

1.4. Emergency telephone number

Emergency number : CHEMTREC (800) 424-9300
CHEMTREC International +1 (703) 527-3887 24 hr

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Skin Irritation 2

Serious Eye Damage 1

Carcinogenicity 1A

Specific Target Organ Toxicity After Single Exposure 3

Specific Target Organ Toxicity After Repeated Exposure 1

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :



GHS05 GHS07 GHS08

Signal word (GHS-US) : Danger

Hazard statements (GHS-US) : Causes skin irritation. Causes serious eye damage. May cause cancer. May cause respiratory irritation. Causes damage to lungs through prolonged or repeated exposure.

Precautionary statements (GHS-US) : Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves/protective clothing/eye protection/face protection. Use only outdoors or in a well-ventilated area. Do not breathe dust. If exposed or concerned: Get medical advice/attention. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. If on skin: Wash with plenty of water. Take off contaminated clothing and wash it before reuse. If skin irritation occurs: Get medical advice/attention. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell. Store locked up. Store in a well-ventilated place. Keep container tightly closed. Dispose of contents and container in accordance with all local, regional, national and international regulations.

2.3. Other hazards

Other hazards not contributing to the classification : Not applicable.

2.4. Unknown acute toxicity (GHS US)

Sakrete Leak Stopper Hydraulic Cement (Gray): 18% of the mixture consists of ingredient(s) of unknown acute toxicity.
Sakrete Fast Setting Cement Patcher: 10% of the mixture consists of ingredient(s) of unknown acute toxicity.

NEXREG

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable.

3.2. Mixture

Name	Product identifier	%
Quartz	(CAS No) 14808-60-7	≤75
Cement, alumina, chemicals	(CAS No) 65997-16-2	≤30[2]
Cement, portland, chemicals	(CAS No) 65997-15-1	5 - 30
Calcium oxide	(CAS No) 1305-78-8	≤7
Sodium carbonate	(CAS No) 497-19-8	≤5[2]
Iron oxide	(CAS No) 1309-37-1	≤5
Aluminum sulfate	(CAS No) 10043-01-3	1.5 - 3[1]
Aluminum oxide	(CAS No) 1344-28-1	1.5 - 3[1]
Magnesium oxide	(CAS No) 1309-48-4	≤3
Calcium hydroxide	(CAS No) 1305-62-0	0.5 - 2[2]
Calcium magnesium hydroxide oxide	(CAS No) 58398-71-3	1.5 - 3[2]
Calcium magnesium hydroxide	(CAS No) 39445-23-3	1.5 - 3[2]
Limestone	(CAS No) 1317-65-3	≤1.5
Gypsum	(CAS No) 13397-24-5	≤1.5
Calcium sulfate	(CAS No) 7778-18-9	≤1.5

[1] Sakrete Fast Setting Cement Patcher
[2] Sakrete Leak Stopper Hydraulic Cement

* The exact percentage (concentration) of composition has been withheld as a trade secret in accordance with paragraph (i) of §1910.1200.

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation : If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention if you feel unwell.

First-aid measures after skin contact : In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Call a physician if irritation develops and persists.

First-aid measures after eye contact : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. If easy to do, remove contact lenses, if worn. Get medical attention immediately.

First-aid measures after ingestion : If swallowed, do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Immediately call a POISON CENTER or doctor/physician.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries after inhalation : May cause respiratory tract irritation.

Symptoms/injuries after skin contact : Causes skin irritation. May cause burns in the presence of moisture. Skin contact during hydration may slowly develop sufficient heat that may cause severe burns possibly resulting in permanent injury. Do not allow product to harden around any body part or allow continuous, prolonged contact with skin. Handling can cause dry skin.

Symptoms/injuries after eye contact : Causes serious eye damage. May cause burns in the presence of moisture. Symptoms may include discomfort or pain, excess blinking and tear production, with possible redness and swelling.

Symptoms/injuries after ingestion : May be harmful if swallowed. May cause stomach distress, nausea or vomiting.

4.3. Indication of any immediate medical attention and special treatment needed

Symptoms may not appear immediately. In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Treat for surrounding material.

Unsuitable extinguishing media : Not available.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Products of combustion may include, and are not limited to: oxides of carbon.

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5.3. Advice for firefighters

Firefighting instructions : Keep upwind of fire. Wear full fire fighting turn-out gear (full Bunker gear) and respiratory protection (SCBA).

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel.

6.2. Methods and material for containment and cleaning up

For containment : Contain spill, then place in a suitable container. Do not flush to sewer or allow to enter waterways. Use appropriate Personal Protective Equipment (PPE).

Methods for cleaning up : Vacuum or sweep material and place in a disposal container.

6.3. Reference to other sections

No additional information available.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Avoid contact with skin and eyes. Do not swallow. Avoid generating and breathing dust. Good housekeeping is important to prevent accumulation of dust. The use of compressed air for cleaning clothing, equipment, etc, is not recommended. Handle and open container with care. When using do not eat, drink or smoke.

Hygiene measures : Launder contaminated clothing before reuse. Wash hands before eating, drinking, or smoking.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep out of the reach of children. Store in dust-tight, dry, labelled containers. Keep container tightly closed when not in use. Avoid any dust buildup by frequent cleaning and suitable construction of the storage area. Do not store in an area equipped with emergency water sprinklers.

7.3. Specific end use(s)

No additional information available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Quartz (14808-60-7)		
ACGIH	ACGIH TWA (mg/m³)	0.025 mg/m³ (respirable fraction)
OSHA	OSHA PEL (TWA) (mg/m^3)	(30)/(%SiO_2 + 2) mg/m^3 TWA, total dust (250)/(%SiO_2 + 5) mppcf TWA, respirable fraction (10)/(%SiO_2 + 2) mg/m^3 TWA, respirable fraction

Cement, alumina, chemicals (65997-16-2)	
ACGIH	Not applicable
OSHA	Not applicable

Cement, portland, chemicals (65997-15-1)		
ACGIH	ACGIH TWA (mg/m³)	1 mg/m³ (particulate matter containing no asbestos and <1% crystalline silica, respirable fraction)
OSHA	OSHA PEL (TWA) (mg/m³)	15 mg/m³ (total dust) 5 mg/m³ (respirable fraction) 50 mppcf (<1% Crystalline silica)

Calcium oxide (1305-78-8)		
ACGIH	ACGIH TWA (mg/m³)	2 mg/m³
OSHA	OSHA PEL (TWA) (mg/m³)	5 mg/m³

Sodium carbonate (497-19-8)	
ACGIH	Not applicable
OSHA	Not applicable

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Iron oxide (1309-37-1)		
ACGIH	ACGIH TWA (mg/m³)	5 mg/m³ (respirable fraction)
OSHA	OSHA PEL (TWA) (mg/m³)	10 mg/m³ (fume) 15 mg/m³ (total dust) 5 mg/m³ (respirable fraction)

Aluminum sulfate (10043-01-3)		
ACGIH	Not applicable	
OSHA	Not applicable	

Aluminum oxide (1344-28-1)		
ACGIH	Not applicable	
OSHA	OSHA PEL (TWA) (mg/m³)	15 mg/m³ (total dust) 5 mg/m³ (respirable fraction)

Magnesium oxide (1309-48-4)		
ACGIH	ACGIH TWA (mg/m³)	10 mg/m³ (inhalable fraction)
OSHA	OSHA PEL (TWA) (mg/m³)	15 mg/m³ (fume, total particulate)

Calcium hydroxide (1305-62-0)		
ACGIH	ACGIH TWA (mg/m³)	5 mg/m³
OSHA	OSHA PEL (TWA) (mg/m³)	15 mg/m³ (total dust) 5 mg/m³ (respirable fraction)

Calcium magnesium hydroxide oxide (58398-71-3)		
ACGIH	Not applicable	
OSHA	Not applicable	

Calcium magnesium hydroxide (39445-23-3)		
ACGIH	Not applicable	
OSHA	Not applicable	

Limestone (1317-65-3)		
ACGIH	Not applicable	
OSHA	OSHA PEL (TWA) (mg/m³)	15 mg/m³ (total dust) 5 mg/m³ (respirable fraction)

Gypsum (13397-24-5)		
ACGIH	ACGIH TWA (mg/m³)	10 mg/m³ (inhalable fraction)
OSHA	OSHA PEL (TWA) (mg/m³)	15 mg/m³ (total dust) 5 mg/m³ (respirable fraction)

Calcium sulfate (7778-18-9)		
ACGIH	ACGIH TWA (mg/m³)	10 mg/m³ (inhalable fraction)
OSHA	OSHA PEL (TWA) (mg/m³)	15 mg/m³ (total dust) 5 mg/m³ (respirable fraction)

8.2. Exposure controls

Appropriate engineering controls : Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, etc.) below recommended exposure limits.

Hand protection : Wear suitable waterproof gloves.

Eye protection : Wear approved eye protection (properly fitted dust- or splash-proof chemical safety goggles) and face protection (face shield).

Skin and body protection : Wear suitable waterproof protective clothing.

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Respiratory protection	:	A NIOSH approved dust mask or filtering facepiece is recommended in poorly ventilated areas or when permissible exposure limits may be exceeded. Respirators should be selected by and used under the direction of a trained health and safety professional following requirements found in OSHA's respirator standard (29 CFR 1910.134) and ANSI's standard for respiratory protection (Z88.2).
Other information	:	Handle according to established industrial hygiene and safety practices. Do not eat, smoke or drink where material is handled, processed or stored. Wash hands carefully before eating or smoking.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Solid
Appearance	:	Powder
Colour	:	Various
Odour	:	Characteristic
Odour threshold	:	No data available
pH	:	10 - 13
Melting point	:	No data available
Freezing point	:	No data available
Boiling point	:	No data available
Flash point	:	No data available
Relative evaporation rate (butylacetate=1)	:	No data available
Flammability (solid, gas)	:	Not Flammable
Explosive limits	:	No data available
Explosive properties	:	No data available
Oxidising properties	:	No data available
Vapour pressure	:	No data available
Relative density	:	No data available
Relative vapour density at 20 °C	:	No data available
Solubility	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity	:	No data available
Viscosity, kinematic	:	No data available
Viscosity, dynamic	:	No data available

9.2. Other information

VOC content : 0%, Not applicable; 0 wt, Not applicable.

SECTION 10: Stability and reactivity

10.1. Reactivity

No dangerous reaction known under conditions of normal use.

10.2. Chemical stability

Stable under normal storage conditions. Keep dry in storage.

10.3. Possibility of hazardous reactions

No dangerous reaction known under conditions of normal use.

10.4. Conditions to avoid

Incompatible materials. Moisture.

10.5. Incompatible materials

Wet cement is alkaline and incompatible with acid, ammonium salts and aluminum metal.

10.6. Hazardous decomposition products

May include, and are not limited to: oxides of carbon.

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SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified.

Sakrete Fast Setting Cement Patcher/Sakrete Leak Stopper Hydraulic Cement (Gray)	
LD50 oral rat	> 2000 mg/kg
LD50 dermal rabbit	No data available
LC50 inhalation rat	No data available

Calcium oxide (1305-78-8)	
LD50 oral rat	> 2000 mg/kg

Sodium carbonate (497-19-8)	
LD50 oral rat	4090 mg/kg
LC50 inhalation rat	2300 mg/m³/2h

Iron oxide (1309-37-1)	
LD50 oral rat	> 10000 mg/kg

Aluminum sulfate (10043-01-3)	
LD50 oral rat	1930 mg/kg

Aluminum oxide (1344-28-1)	
LD50 oral rat	> 5000 mg/kg

Calcium hydroxide (1305-62-0)	
LD50 oral rat	7340 mg/kg

Calcium sulfate (7778-18-9)	
LD50 oral rat	> 3000 mg/kg

Skin corrosion/irritation : Causes skin irritation.

Serious eye damage/irritation : Causes serious eye damage.

Respiratory or skin sensitisation : Based on available data, the classification criteria are not met.

Germ cell mutagenicity : Based on available data, the classification criteria are not met.

Carcinogenicity : May cause cancer.

Quartz (14808-60-7)	
IARC group	1 - Carcinogenic to humans
National Toxicology Program (NTP) Status	2 - Known Human Carcinogens

Iron oxide (1309-37-1)	
IARC group	3 - Not classifiable

Reproductive toxicity : Based on available data, the classification criteria are not met.

Specific target organ toxicity (single exposure) : May cause respiratory irritation.

Specific target organ toxicity (repeated exposure) : Causes damage to lungs through prolonged or repeated exposure. (Respirable crystalline silica in the form of quartz or cristobalite from occupational sources is listed by the International Agency for Research on Cancer (IARC) and National Toxicology Program (NTP) as a lung carcinogen. Prolonged exposure to respirable crystalline silica has been known to cause silicosis, a lung disease, which may be disabling. While there may be a factor of individual susceptibility to a given exposure to respirable silica dust, the risk of contracting silicosis and the severity of the disease is clearly related to the amount of dust exposure and the length of time (usually years) of exposure.)

Aspiration hazard : Based on available data, the classification criteria are not met.

Symptoms/injuries after inhalation : May cause respiratory tract irritation.

Symptoms/injuries after skin contact : Causes skin irritation. May cause burns in the presence of moisture. Skin contact during hydration may slowly develop sufficient heat that may cause severe burns possibly resulting in permanent injury. Do not allow product to harden around any body part or allow continuous, prolonged contact with skin. Handling can cause dry skin.

Symptoms/injuries after eye contact : Causes serious eye damage. May cause burns in the presence of moisture. Symptoms may include discomfort or pain, excess blinking and tear production, with possible redness and swelling.

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Symptoms/injuries after ingestion : May be harmful if swallowed. May cause stomach distress, nausea or vomiting.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : No ecological consideration when used according to directions. Normal dilution of this product to drains, sewers, septic systems and treatment plants is not considered environmentally harmful.

12.2. Persistence and degradability

Sakrete Fast Setting Cement Patcher/Sakrete Leak Stopper Hydraulic Cement (Gray)	
Persistence and degradability	No data available.

12.3. Bioaccumulative potential

Sakrete Fast Setting Cement Patcher/Sakrete Leak Stopper Hydraulic Cement (Gray)	
Bioaccumulative potential	No data available.

12.4. Mobility in soil

Sakrete Fast Setting Cement Patcher/Sakrete Leak Stopper Hydraulic Cement (Gray)	
Ecology - soil	No data available.

12.5. Other adverse effects

Effect on the global warming : No known ecological damage caused by this product.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : This material must be disposed of in accordance with all local, state, provincial, and federal regulations.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT.

Not regulated for transport.

Additional information

Other information : No supplementary information available.

SECTION 15: Regulatory information

15.1. US Federal regulations

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory except for:

Gypsum	CAS No 13397-24-5

Aluminum oxide (1344-28-1)	
Subject to reporting requirements of United States SARA Section 313	
SARA Section 313 - Emission Reporting	1.0 % (fibrous forms)

15.2. US State regulations

Sakrete Fast Setting Cement Patcher/Sakrete Leak Stopper Hydraulic Cement (Gray)	
State or local regulations	This product contains Crystalline Silica, Quartz and may also contain other chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

SECTION 16: Other information

Date of issue : 01/17/2014

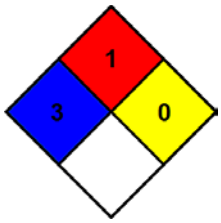
Revision date : 09/08/2015

Version 1.1

Data sources : SDS prepared pursuant to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

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NFPA health hazard	:	3 - Short exposure could cause serious temporary or residual injury even though prompt medical attention was given.
NFPA fire hazard	:	1 - Must be preheated before ignition can occur.
NFPA reactivity	:	0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



Disclaimer: We believe the statements, technical information and recommendations contained herein are reliable, but they are given without warranty or guarantee of any kind. The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for the user's own particular use.

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Safety Data Sheet

SpecStrip

SECTION 1 – PRODUCT AND COMPANY IDENTIFICATION

1.1 Trade Name (as labeled):	SpecStrip
Synonyms:	N/A
CAS No:	Mixture
1.2 Product Use:	General purpose reactive form release agent.
1.3 Company Name:	**SpecChem**
Company Address:	1511 Baltimore Ave; Suite 600
Company Address Cont:	Kansas City, MO 64108
Business Phone:	(816) 968-5600
Website:	www.specchemllc.com
1.4 Emergency Telephone Number:	**Chemtrec: (800) 424-9300**
Date of Current Revision:	January 10, 2015
Date of Last Revision:	October 6, 2011

SECTION 2 – HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: This product is an amber colored liquid with a characteristic hydrocarbon odor.
Health Hazards: May cause skin irritation.
Flammability Hazards: This product is not a flammable liquid with a flash point of >200°F (93°C).
Reactivity Hazards: None.
Environmental Hazards: The environmental effects of this product have not been investigated, however release may cause long term adverse environmental effects.

US DOT Symbols Not Regulated

EU and GHS Symbols



Signal Word Warning

2.1 EU Labeling and Classification:
This product meets the definition of a hazardous substance or preparation as defined by the European Union Council Directives 67/548/EEC, 1999/45/EC, 1272/2008/EC and subsequent Directives.
EU HAZARD CLASSIFICATION OF INGREDIENTS PER DIRECTIVE 1272/2008/EC:
Index Number:
204-007-1 is not listed in Annex I
Substances not listed either individually or in group entries must be self classified.

Components Contributing to Classification: Oleic Acid
2.2 Label Elements:
GHS Hazard Classifications: Skin Irritation Category 2
Hazard Statements: H315 Causes skin irritation

Precautionary Statements: P280 Wear protective gloves.
P264 Wash thoroughly after handling

Response Statements: P302+P352 IF ON SKIN: Wash with plenty of water.
P321 Specific treatment (see supplemental first aid instructions on this label).
P332+P313 If skin irritation occurs: Get medical advice/attention.
P362+P364 Take off contaminated clothing and wash clothing before reuse.

Storage Statements: None applicable

Disposal Statements: P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

2.3 Health Hazards or Risks From Exposure:

Symptoms of Overexposure by Route of Exposure:

The most significant routes of overexposure for this product are by contact with skin or eyes. The symptoms of overexposure are described in the following paragraphs.

Acute:

Inhalation: No serious effects anticipated under normal conditions.
Skin Contact: May cause moderate irritation to skin. Repeated exposure may cause skin dryness or cracking.
Eye Contact: Direct contact to the eyes may be irritating.
Ingestion: May cause gastrointestinal irritation, nausea, and vomiting.

Chronic: Repeated exposure may cause skin dryness or cracking.

Target Organs:

Acute: Skin
Chronic: Skin

SECTION 3 – COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Ingredients	WT%	CAS No.	EINECS No.	Hazard Classification
Oleic Acid	< 3%	112-80-1	204-007-1	Skin Irrit. 2
Balance of other ingredients are non-hazardous or less than 1% in concentration (or 0.1% for carcinogens, reproductive toxins, or respiratory sensitizers).				

Note: All WHMIS required information is included in appropriate sections based on the ANSI Z400.1-2010 format. This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR, EU Directives and the Japanese Industrial Standard JIS Z 7250:2000

SECTION 4 – FIRST AID MEASURES

4.1 Description of First Aid Measures:

Eye Contact: If product enters the eyes, flush with plenty of water or eye wash solution for several minutes. Remove contacts if present and easy to do. Seek medical attention if irritation persists.

Skin Contact: Wash skin thoroughly with soap and water after handling. Seek medical attention if irritation develops and persists.

Inhalation: If breathing becomes difficult, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. Seek medical attention.

Ingestion: If product is swallowed, call physician or poison center immediately. If professional advice is not available, do not induce vomiting. Never induce vomiting or give dilutents (milk or water) to someone who is unconscious, having convulsions, or who cannot swallow. Seek medical advice. Take a copy of the label and/or SDS with the victim to the health professional.

Medical Conditions Generally Aggravated By Exposure: Pre-existing skin, respiratory system or eye problems may be aggravated by prolonged contact.

4.2 Symptoms and Effects Both Acute and Delayed: Exposure to skin may cause irritation.

4.3 Recommendations to Physicians: Treat symptoms and eliminate overexposure.

SECTION 5 – FIRE FIGHTING MEASURES

5.1 Fire Extinguishing Materials:

Use the following fire extinguishing materials:

Water Spray: Yes
Foam: Yes
Halon: Yes
Carbon Dioxide: Yes
Dry Chemical: Yes
Other: Any “C” Class

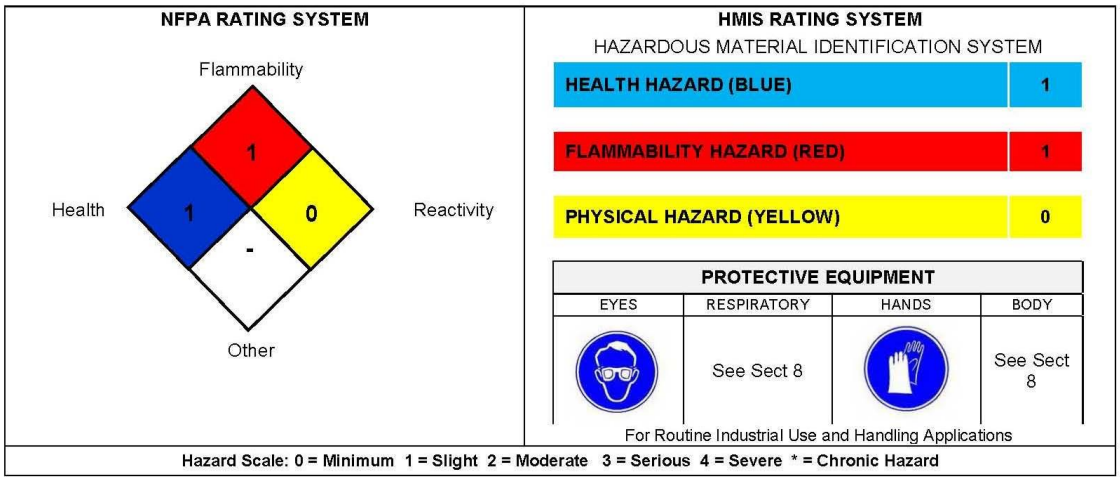
5.2 Unusual Fire and Explosion Hazards:

Irritating and toxic fumes may be produced at high temperatures. Use of water may result if the formation of a toxic aqueous solution. Do not allow run-off from fire fighting to enter drains or water courses.

Explosive Sensitivity to Mechanical Impact:	No
Explosive Sensitivity to Static Discharge:	No

5.3 Special Fire-Fighting Procedures:

- Incipient fire responders should wear eye protection.
- Structural firefighters must wear Self-Contained Breathing Apparatus (SCBA) and full protective equipment.
- Isolate materials not yet involved in the fire and protect personnel.
- Move containers from fire area if this can be done without risk; otherwise, cool with carefully applied water spray.
- If possible, prevent run-off water from entering storm drains, bodies of water, or other environmentally sensitive areas.



SECTION 6 – ACCIDENTAL RELEASE MEASURES (STEPS FOR SPILLS)

6.1 Personal Precautions, Protective Equipment and Emergency Procedures:
Use cautious judgment when cleaning up spill. Wear suitable protective clothing, gloves, and eye/face protection.

6.2 Environmental Precautions:
Construct a dike to prevent spreading. Keep out of sewers, storm drains, surface waters, and soils.

6.3 Spill and Leak Response:

Small Spills:

- Collect material via broom or mop. Place in tightly sealed containers for proper disposal.
- Approach spill areas with caution.
- If liquid was introduced, create a dike or trench to contain material.
- Soak up with absorbent material such as clay, sand or other suitable non-reactive material.

Large Spills:

- Place in leak-proof containers. Seal tightly for proper disposal.
- Dispose of in accordance with U.S. Federal, State, and local hazardous waste disposal regulations and those of Canada and its Provinces, those of Australia, Japan and EU Member States (see Section 13, Disposal Considerations).

SECTION 7 - HANDLING AND STORAGE

7.1 Precautions for Safe Handling:
To prevent eye contact under the foreseeable conditions of use, wear appropriate safety eyewear. When handling, do not eat, drink, or smoke. Wash thoroughly after handling. Do not handle or store near heat, sparks, or flame.

7.2 Storage and Handling Practices:
Keep away from incompatible materials. Keep container closed when not in use and store in well ventilated area.

7.3 Specific Uses:
General purpose reactive form release agent..

SECTION 8 – EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Exposure Parameters:

Ingredients	CAS No.	OSHA PEL	NIOSH PEL
Oleic Acid	112-80-1	Not Listed	Not Listed

8.2 Exposure Controls:

Ventilation and Engineering Controls: Use with adequate ventilation to ensure exposure levels are maintained below the limits provided above.

The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132), or standards of EU member states (including EN 149 for respiratory PPE, and EN 166 for face/eye protection), and those of Japan. Please reference applicable regulations and standards for relevant details.

Respiratory Protection: Not required for properly ventilated areas. Maintain airborne contaminant concentrations below guidelines listed above, if applicable. If necessary, use only respiratory protection authorized in the U.S. Federal OSHA Respiratory Protection Standard (29 CFR 1910.134), equivalent U.S. State standards, Canadian CSA Standard Z94.4-93, the European Standard EN149, or EU member states.

Eye Protection: Safety glasses or goggles are required. If necessary, refer to U.S. OSHA 29 CFR 1910.133, Canadian Standards, and the European Standard EN166, Australian Standards, or relevant Japanese Standards.

Hand Protection: Chemical resistant gloves are required to prevent skin contact. If necessary, refer to U.S. OSHA 29 CFR 1910.138, the European Standard DIN EN 374, the appropriate Standards of Canada, Australian Standards, or relevant Japanese Standards.

Body Protection: Use body protect appropriate to task being performed.

If necessary, refer to appropriate Standards of Canada, or appropriate standards of the EU, Australian Standards, or relevant Japanese Standards. If a hazard of injury to the feet exists due to falling objects, rolling objects, where objects may pierce the soles of the feet or where employee's feet may be exposed to electrical hazards, use foot protection, as described in U.S. OSHA 29 CFR 1910.136.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on Basic Physical and Chemical Properties:
Appearance (Physical State and Color): Amber colored liquid
Odor: Characteristic hydrocarbon
Odor Threshold: No data available
pH: No data available
Melting/Freezing Point: No data available
Boiling Point: 519-680°F (310-360°C)
Flash Point: >200°F (93°C)
Evaporation Rate: No data available
Flammability (Solid; Gas): Not applicable
Upper/Lower Flammability or Explosion Limits: Not data available
Vapor Pressure (mm Hg @ 20°C (68° F): No data available
Vapor Density: Heavier than air
Relative Density: No data available
Specific Gravity: 0.89
Solubility in Water: less than .1%
Weight per Gallon: No data available
Partition Coefficient (n-octanol/water): No data available
Auto-Ignition Temperature: No data available
Decomposition Temperature: No data available
Viscosity: No data available

9.2 Other Information: No data available

SECTION 10 – STABILITY AND REACTIVITY

10.1 Reactivity: This product is not reactive.
10.2 Stability: Stable under conditions of normal storage and use.
10.3 Possibility of Hazardous Reactions: Will not occur.
10.4 Conditions to Avoid: Avoid excessive temperatures.
10.5 Incompatible Substances: Strong oxidizing agents.
10.6 Hazardous Decomposition Products: Carbon monoxide and dioxide smoke.

SECTION 11 – TOXICOLOGY INFORMATION

11.1 Information on Toxicological Effects:

Toxicity Data:

Oleic Acid	112-80-1	LD50 Oral – Rat	74,000 mg/kg

Suspected Cancer Agent: Ingredients within this product are found on one or more of the following lists: FEDERAL OSHA Z LIST, NTP, IARC, or CAL/OSHA and therefore are considered to be cancer-causing agents by these agencies.

Irritancy: Skin irritant.

Sensitization to the Product: This product is not expected to cause skin sensitization.

Germ Cell Mutagenicity: This product contains ingredients that are suspected to be a germ cell mutagenic.

Reproductive Toxicity: This product is not expected to be a human reproductive toxicant.

SECTION 12 – ECOLOGICAL INFORMATION

12.1 Toxicity:

Oleic Acid	112-80-1	LC50 – Fathead Minnow	205 mg/l – 96h

12.2 Persistence and Degradability: No specific data available on this product.

12.3 Bioaccumulative Potential: No specific data available on this product.

12.4 Mobility in Soil: No specific data available on this product.

12.5 Results of PBT and vPvB Assessment: No specific data available on this product.

12.6 Other Adverse Effects: No data available

12.7 Water Endangerment Class: At present, there are no ecotoxicological assessments for this product.

SECTION 13 – DISPOSAL CONSIDERATIONS

13.1 Waste Treatment Methods: Waste disposal must be in accordance with appropriate U.S. Federal, State, and local regulations, those of Australia, EU Member States and Japan.

13.2 EU Waste Code: Not determined

SECTION 14 - TRANSPORTATION INFORMATION

14.1 U.S. Department of Transportation (DOT) Shipping Regulations:

This product is classified (per 49 CFR 172.101) by the U.S. Department of Transportation, as follows.

UN Identification Number:	Not applicable
Proper Shipping Name:	Not regulated
Hazard Class Number and Description:	Not applicable
Packing Group:	Not applicable
DOT Label(s) Required:	Not applicable
North American Emergency Response Guidebook Number:	Not applicable
14.2 Environmental Hazards:	
Marine Pollutant:	The components of this product are designated by the Department of Transportation to be Marine Pollutants (49 CFR 172.101, Appendix B).
14.3 Special Precaution for User:	None
14.4 International Air Transport Association Shipping Information (IATA):	None.
14.5 International Maritime Organization Shipping Information (IMO):	
UN Identification Number:	Not applicable
Proper Shipping Name:	Not regulated
Hazard Class Number and Description:	Not applicable
Packing Group:	Not applicable
EMS-No:	Not applicable

SECTION 15 – REGULATORY INFORMATION

15.1 Safety, Health and Environmental Regulations Specific for the Substance or Mixture:

United States Regulations:

U.S. SARA Reporting Requirements:

The components of this product are not subject to the reporting requirements of Sections 302, 304, and 313 of Title III of the Superfund Amendments and Reauthorization Act.

U.S. SARA 311/312:

Acute Health: Yes; Chronic Health: No; Fire: No; Reactivity; No

U.S. CERCLA Reportable Quantity:

Not applicable

U.S. TSCA Inventory Status:

The components of this product are listed on the TSCA Inventory or are exempted from listing.

Other U.S. Federal Regulations:

None known

California Safe Drinking Water and Toxic Enforcement Act (Proposition 66):

This product does not contain ingredients on the Proposition 65 Lists.

15.2 Canadian Regulations:

Canadian DSL/NDSL Inventory Status:

Components are DSL Listed, NDSL Listed and/or are exempt from listing

Other Canadian Regulations:

Not applicable

Canadian Environmental Protection Act (CEPA) Priorities Substances Lists:

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian WHMIS Classification and Symbols:
This product is Class B2, Flammable Liquid, and D2B, Materials causing other toxic effects, per WHMIS Controlled Product Regulations.



15.3 European Economic Community Information:
This product meets the definition of a hazardous substance or preparation as defined by the European Union Council Directives 67/548/EEC, 1999/45/EC, 1272/2008/EC and subsequent Directives. See Section 2 for Details.

Chemical Safety Assessment:
No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

15.4 Australian Information for Product:
Components of this product are listed on the International Chemical Inventory list.

15.5 Japanese Information for Product:
Japanese Minister of International Trade and Industry (MITI) Status: The components of this product are not listed as Class I specified Chemical Substances, Class II Specified Chemical Substances, or Designated Chemical Substances by the Japanese MITI.

15.6 International Chemical Inventories:
Listing of the components on individual country Chemical Inventories is as follows:
Australian Inventory of Chemical Substances (AICS): Listed
Korean Existing Chemicals List (ECL): Listed
Japanese Existing National Inventory of Chemical Substances (ENCS): Listed
Philippines Inventory if Chemicals and Chemical Substances (PICCS): Listed
U.S. TSCA: Listed

SECTION 16 – OTHER INFORMATION

Prepared By: Chris Eigbrett (MSDS to GHS Compliance)
Date of Printing: January 10, 2014

The information contained herein is believed to be accurate but is not warranted to be so. Data and calculations are based on information furnished by the manufacturer of the product and manufacturers of the components of the product. Users are advised to confirm in advance of the need that information is current, applicable and suited to the circumstances of use. This safety sheet cannot cover all possible situations which the user may experience during processing. Each aspect of your operation should be examined to determine if, or where, additional precautions may be necessary. All health and safety information contained in this bulletin should be provided to your employees or customers. SpecChem assumes no responsibility for injury to vendee or third party person proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Furthermore, SpecChem assumes no responsibility for injury caused by abnormal use of this material even if reasonable safety procedures are followed. Compliance with all applicable federal, state, and local laws and local regulations remains the responsibility of the user.

END OF SDS SHEET

Safety Data Sheet

SpecStrip Plus

Version 1

SECTION 1 – PRODUCT AND COMPANY IDENTIFICATION

1.1 Trade Name (as labeled):	SpecStrip Plus
Synonyms:	N/A
CAS No:	Mixture
1.2 Product Use:	General purpose reactive form release agent.
1.3 Company Name:	**SpecChem**
Company Address:	1511 Baltimore Ave; Suite 600
Company Address Cont:	Kansas City, MO 64108
Business Phone:	(816) 968-5600
Website:	www.specchemllc.com
1.4 Emergency Telephone Number:	**Chemtrec: (800) 424-9300**
Date of Current Revision:	January 10, 2015
Date of Last Revision:	October 6, 2011

SECTION 2 – HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: This product is an amber colored liquid with a characteristic hydrocarbon odor.
Health Hazards: May cause skin irritation.
Flammability Hazards: This product is not a flammable liquid with a flash point of >200°F (93°C).
Reactivity Hazards: None.
Environmental Hazards: The environmental effects of this product have not been investigated, however release may cause long term adverse environmental effects.

US DOT Symbols Not Regulated

EU and GHS Symbols



Signal Word Warning

2.1 EU Labeling and Classification:
This product meets the definition of a hazardous substance or preparation as defined by the European Union Council Directives 67/548/EEC, 1999/45/EC, 1272/2008/EC and subsequent Directives.
EU HAZARD CLASSIFICATION OF INGREDIENTS PER DIRECTIVE 1272/2008/EC:
Index Number:
204-007-1 is not listed in Annex I
Substances not listed either individually or in group entries must be self classified.

Components Contributing to Classification: Oleic Acid
2.2 Label Elements:
GHS Hazard Classifications: Skin Irritation Category 2
Hazard Statements: H315 Causes skin irritation

Precautionary Statements:	P280 Wear protective gloves. P264 Wash thoroughly after handling
Response Statements:	P302+P352 IF ON SKIN: Wash with plenty of water. P321 Specific treatment (see supplemental first aid instructions on this label). P332+P313 If skin irritation occurs: Get medical advice/attention. P362+P364 Take off contaminated clothing and wash clothing before reuse.
Storage Statements:	None applicable
Disposal Statements:	P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

2.3 Health Hazards or Risks From Exposure:

Symptoms of Overexposure by Route of Exposure:

The most significant routes of overexposure for this product are by contact with skin or eyes. The symptoms of overexposure are described in the following paragraphs.

Acute:

Inhalation: No serious effects anticipated under normal conditions.

Skin Contact: May cause moderate irritation to skin. Repeated exposure may cause skin dryness or cracking.

Eye Contact: Direct contact to the eyes may be irritating.

Ingestion: May cause gastrointestinal irritation, nausea, and vomiting.

Chronic: Repeated exposure may cause skin dryness or cracking.

Target Organs:

Acute: Skin

Chronic: Skin

SECTION 3 – COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Ingredients	WT%	CAS No.	EINECS No.	Hazard Classification
Oleic Acid	< 3%	112-80-1	204-007-1	Skin Irrit. 2
Balance of other ingredients are non-hazardous or less than 1% in concentration (or 0.1% for carcinogens, reproductive toxins, or respiratory sensitizers).				

Note: All WHMIS required information is included in appropriate sections based on the ANSI Z400.1-2010 format. This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR, EU Directives and the Japanese Industrial Standard JIS Z 7250:2000

SECTION 4 – FIRST AID MEASURES

4.1 Description of First Aid Measures:

Eye Contact:	If product enters the eyes, flush with plenty of water or eye wash solution for several minutes. Remove contacts if present and easy to do. Seek medical attention if irritation persists.

Skin Contact: Wash skin thoroughly with soap and water after handling. Seek medical attention if irritation develops and persists.

Inhalation: If breathing becomes difficult, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. Seek medical attention.

Ingestion: If product is swallowed, call physician or poison center immediately. If professional advice is not available, do not induce vomiting. Never induce vomiting or give dilutents (milk or water) to someone who is unconscious, having convulsions, or who cannot swallow. Seek medical advice. Take a copy of the label and/or SDS with the victim to the health professional.

Medical Conditions Generally Aggravated By Exposure: Pre-existing skin, respiratory system or eye problems may be aggravated by prolonged contact.

4.2 Symptoms and Effects Both Acute and Delayed: Exposure to skin may cause irritation.

4.3 Recommendations to Physicians: Treat symptoms and eliminate overexposure.

SECTION 5 – FIRE FIGHTING MEASURES

5.1 Fire Extinguishing Materials:

Use the following fire extinguishing materials:

Water Spray: Yes
Foam: Yes
Halon: Yes
Carbon Dioxide: Yes
Dry Chemical: Yes
Other: Any “C” Class

5.2 Unusual Fire and Explosion Hazards:

Irritating and toxic fumes may be produced at high temperatures. Use of water may result if the formation of a toxic aqueous solution. Do not allow run-off from fire fighting to enter drains or water courses.

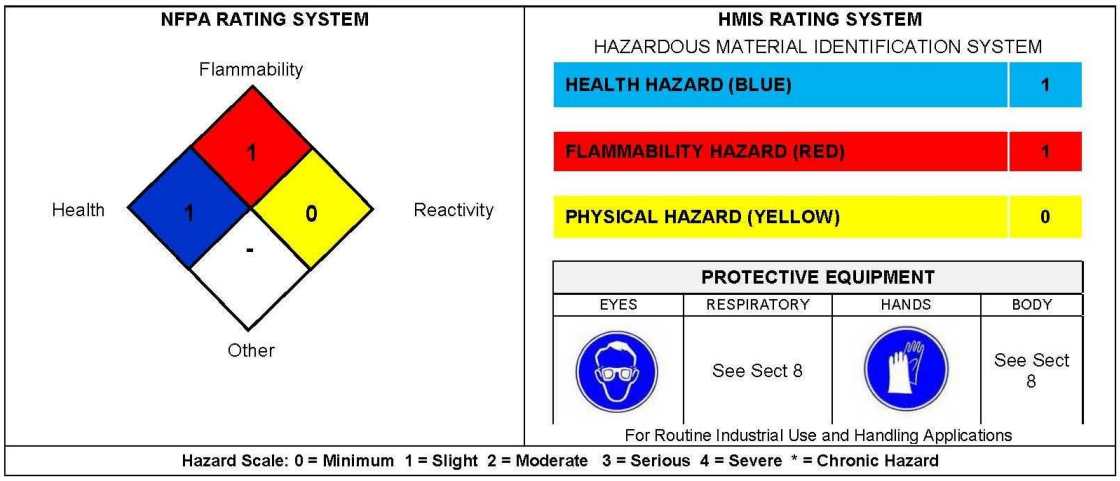
Explosive Sensitivity to Mechanical Impact:	No
Explosive Sensitivity to Static Discharge:	No

5.3 Special Fire-Fighting Procedures:

- Incipient fire responders should wear eye protection.
- Structural firefighters must wear Self-Contained Breathing Apparatus (SCBA) and full protective equipment.
- Isolate materials not yet involved in the fire and protect personnel.
- Move containers from fire area if this can be done without risk; otherwise, cool with carefully applied water spray.
- If possible, prevent run-off water from entering storm drains, bodies of water, or other environmentally sensitive areas.

SpecStrip Plus

Version 1



SECTION 6 – ACCIDENTAL RELEASE MEASURES (STEPS FOR SPILLS)

6.1 Personal Precautions, Protective Equipment and Emergency Procedures:
Use cautious judgment when cleaning up spill. Wear suitable protective clothing, gloves, and eye/face protection.

6.2 Environmental Precautions:
Construct a dike to prevent spreading. Keep out of sewers, storm drains, surface waters, and soils.

6.3 Spill and Leak Response:

Small Spills:

- Collect material via broom or mop. Place in tightly sealed containers for proper disposal.
- Approach spill areas with caution.
- If liquid was introduced, create a dike or trench to contain material.
- Soak up with absorbent material such as clay, sand or other suitable non-reactive material.

Large Spills:

- Place in leak-proof containers. Seal tightly for proper disposal.
- Dispose of in accordance with U.S. Federal, State, and local hazardous waste disposal regulations and those of Canada and its Provinces, those of Australia, Japan and EU Member States (see Section 13, Disposal Considerations).

SECTION 7 - HANDLING AND STORAGE

7.1 Precautions for Safe Handling:
To prevent eye contact under the foreseeable conditions of use, wear appropriate safety eyewear. When handling, do not eat, drink, or smoke. Wash thoroughly after handling. Do not handle or store near heat, sparks, or flame.

7.2 Storage and Handling Practices:
Keep away from incompatible materials. Keep container closed when not in use and store in well ventilated area.

7.3 Specific Uses:
General purpose reactive form release agent..

SECTION 8 – EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Exposure Parameters:

Ingredients	CAS No.	OSHA PEL	NIOSH PEL
Oleic Acid	112-80-1	Not Listed	Not Listed

8.2 Exposure Controls:

Ventilation and Engineering Controls: Use with adequate ventilation to ensure exposure levels are maintained below the limits provided above.

The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132), or standards of EU member states (including EN 149 for respiratory PPE, and EN 166 for face/eye protection), and those of Japan. Please reference applicable regulations and standards for relevant details.

Respiratory Protection: Not required for properly ventilated areas. Maintain airborne contaminant concentrations below guidelines listed above, if applicable. If necessary, use only respiratory protection authorized in the U.S. Federal OSHA Respiratory Protection Standard (29 CFR 1910.134), equivalent U.S. State standards, Canadian CSA Standard Z94.4-93, the European Standard EN149, or EU member states.

Eye Protection: Safety glasses or goggles are required. If necessary, refer to U.S. OSHA 29 CFR 1910.133, Canadian Standards, and the European Standard EN166, Australian Standards, or relevant Japanese Standards.

Hand Protection: Chemical resistant gloves are required to prevent skin contact. If necessary, refer to U.S. OSHA 29 CFR 1910.138, the European Standard DIN EN 374, the appropriate Standards of Canada, Australian Standards, or relevant Japanese Standards.

Body Protection: Use body protect appropriate to task being performed.

If necessary, refer to appropriate Standards of Canada, or appropriate standards of the EU, Australian Standards, or relevant Japanese Standards. If a hazard of injury to the feet exists due to falling objects, rolling objects, where objects may pierce the soles of the feet or where employee's feet may be exposed to electrical hazards, use foot protection, as described in U.S. OSHA 29 CFR 1910.136.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on Basic Physical and Chemical Properties:
Appearance (Physical State and Color): Amber colored liquid
Odor: Characteristic hydrocarbon
Odor Threshold: No data available
pH: No data available
Melting/Freezing Point: No data available
Boiling Point: 519-680°F (310-360°C)
Flash Point: >200°F (93°C)
Evaporation Rate: No data available
Flammability (Solid; Gas): Not applicable
Upper/Lower Flammability or Explosion Limits: Not data available
Vapor Pressure (mm Hg @ 20°C (68° F): No data available
Vapor Density: Heavier than air
Relative Density: No data available
Specific Gravity: 0.89
Solubility in Water: less than .1%
Weight per Gallon: No data available
Partition Coefficient (n-octanol/water): No data available
Auto-Ignition Temperature: No data available
Decomposition Temperature: No data available
Viscosity: No data available

9.2 Other Information: No data available

SECTION 10 – STABILITY AND REACTIVITY

10.1 Reactivity: This product is not reactive.
10.2 Stability: Stable under conditions of normal storage and use.
10.3 Possibility of Hazardous Reactions: Will not occur.
10.4 Conditions to Avoid: Avoid excessive temperatures.
10.5 Incompatible Substances: Strong oxidizing agents.
10.6 Hazardous Decomposition Products: Carbon monoxide and dioxide smoke.

SECTION 11 – TOXICOLOGY INFORMATION

11.1 Information on Toxicological Effects:

Toxicity Data:

Oleic Acid	112-80-1	LD50 Oral – Rat	74,000 mg/kg

Suspected Cancer Agent: Ingredients within this product are found on one or more of the following lists: FEDERAL OSHA Z LIST, NTP, IARC, or CAL/OSHA and therefore are considered to be cancer-causing agents by these agencies.

Irritancy: Skin irritant.

Sensitization to the Product: This product is not expected to cause skin sensitization.

Germ Cell Mutagenicity: This product contains ingredients that are suspected to be a germ cell mutagenic.

Reproductive Toxicity: This product is not expected to be a human reproductive toxicant.

SECTION 12 – ECOLOGICAL INFORMATION

12.1 Toxicity:

Oleic Acid	112-80-1	LC50 – Fathead Minnow	205 mg/l – 96h

12.2 Persistence and Degradability: No specific data available on this product.

12.3 Bioaccumulative Potential: No specific data available on this product.

12.4 Mobility in Soil: No specific data available on this product.

12.5 Results of PBT and vPvB Assessment: No specific data available on this product.

12.6 Other Adverse Effects: No data available

12.7 Water Endangerment Class: At present, there are no ecotoxicological assessments for this product.

SECTION 13 – DISPOSAL CONSIDERATIONS

13.1 Waste Treatment Methods: Waste disposal must be in accordance with appropriate U.S. Federal, State, and local regulations, those of Australia, EU Member States and Japan.

13.2 EU Waste Code: Not determined

SECTION 14 - TRANSPORTATION INFORMATION

14.1 U.S. Department of Transportation (DOT) Shipping Regulations:

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This product is classified (per 49 CFR 172.101) by the U.S. Department of Transportation, as follows.

UN Identification Number:	Not applicable
Proper Shipping Name:	Not regulated
Hazard Class Number and Description:	Not applicable
Packing Group:	Not applicable
DOT Label(s) Required:	Not applicable
North American Emergency Response Guidebook Number:	Not applicable
14.2 Environmental Hazards:	
Marine Pollutant:	The components of this product are designated by the Department of Transportation to be Marine Pollutants (49 CFR 172.101, Appendix B).
14.3 Special Precaution for User:	None
14.4 International Air Transport Association Shipping Information (IATA):	None.
14.5 International Maritime Organization Shipping Information (IMO):	
UN Identification Number:	Not applicable
Proper Shipping Name:	Not regulated
Hazard Class Number and Description:	Not applicable
Packing Group:	Not applicable
EMS-No:	Not applicable

SECTION 15 – REGULATORY INFORMATION

15.1 Safety, Health and Environmental Regulations Specific for the Substance or Mixture:

United States Regulations:

U.S. SARA Reporting Requirements:

The components of this product are not subject to the reporting requirements of Sections 302, 304, and 313 of Title III of the Superfund Amendments and Reauthorization Act.

U.S. SARA 311/312:

Acute Health: Yes; Chronic Health: No; Fire: No; Reactivity; No

U.S. CERCLA Reportable Quantity:

Not applicable

U.S. TSCA Inventory Status:

The components of this product are listed on the TSCA Inventory or are exempted from listing.

Other U.S. Federal Regulations:

None known

California Safe Drinking Water and Toxic Enforcement Act (Proposition 66):

This product does not contain ingredients on the Proposition 65 Lists.

15.2 Canadian Regulations:

Canadian DSL/NDSL Inventory Status:

Components are DSL Listed, NDSL Listed and/or are exempt from listing

Other Canadian Regulations:

Not applicable

Canadian Environmental Protection Act (CEPA) Priorities Substances Lists:

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian WHMIS Classification and Symbols:
This product is Class B2, Flammable Liquid, and D2B, Materials causing other toxic effects, per WHMIS Controlled Product Regulations.



15.3 European Economic Community Information:
This product meets the definition of a hazardous substance or preparation as defined by the European Union Council Directives 67/548/EEC, 1999/45/EC, 1272/2008/EC and subsequent Directives. See Section 2 for Details.

Chemical Safety Assessment:
No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

15.4 Australian Information for Product:
Components of this product are listed on the International Chemical Inventory list.

15.5 Japanese Information for Product:
Japanese Minister of International Trade and Industry (MITI) Status: The components of this product are not listed as Class I specified Chemical Substances, Class II Specified Chemical Substances, or Designated Chemical Substances by the Japanese MITI.

15.6 International Chemical Inventories:
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Japanese Existing National Inventory of Chemical Substances (ENCS): Listed
Philippines Inventory if Chemicals and Chemical Substances (PICCS): Listed
U.S. TSCA: Listed

SECTION 16 – OTHER INFORMATION

Prepared By: Chris Eigbrett (MSDS to GHS Compliance)
Date of Printing: January 10, 2014

The information contained herein is believed to be accurate but is not warranted to be so. Data and calculations are based on information furnished by the manufacturer of the product and manufacturers of the components of the product. Users are advised to confirm in advance of the need that information is current, applicable and suited to the circumstances of use. This safety sheet cannot cover all possible situations which the user may experience during processing. Each aspect of your operation should be examined to determine if, or where, additional precautions may be necessary. All health and safety information contained in this bulletin should be provided to your employees or customers. SpecChem assumes no responsibility for injury to vendee or third party person proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Furthermore, SpecChem assumes no responsibility for injury caused by abnormal use of this material even if reasonable safety procedures are followed. Compliance with all applicable federal, state, and local laws and local regulations remains the responsibility of the user.

END OF SDS SHEET

BASF
We create chemistry

Safety Data Sheet
SPRAYTITE® 178-XF B-RESIN

1. Identification

Product identifier used on the label

SPRAYTITE* 178-XF B-RESIN

Recommended use of the chemical and restriction on use

Recommended use*: polyurethane component
Suitable for use in industrial sector: Polymers industry

* The "Recommended use" identified for this product is provided solely to comply with a US Federal requirement and is not part of the seller's published specification. The terms of this Safety Data Sheet (SDS) do not create or infer any warranty, express or implied, including by incorporation into or reference in the seller's sales agreement.

Details of the supplier of the safety data sheet

Company:
BASF CORPORATION
100 Park Avenue
Florham Park, NJ 07932, USA

Telephone: +1 973 245-6000

Emergency telephone number

CHEMTREC: 1-800-424-9300
BASF HOTLINE: 1-800-832-HELP (4357)

Other means of identification

Chemical family:	resin
Synonyms:	Urethane System Resin Component

2. Hazards Identification

According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

Classification of the product

Skin Corr./Irrit.	2	Skin corrosion/irritation
Eye Dam./Irrit.	1	Serious eye damage/eye irritation
Carc.	2	Carcinogenicity
Repr.	2 (unborn child)	Reproductive toxicity
STOT RE	2	Specific target organ toxicity — repeated exposure

3. Composition / Information on Ingredients

According to Regulation 1994 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

CAS Number	Content (W/W)	Chemical name
	< 80.0 %	Polyol
	< 15.0 %	Flame Retardant
460-73-1	< 10.0 %	1,1,1,3,3-pentafluoropropane
25265-71-8	< 5.0 %	dipropylene glycol
108-01-0	< 5.0 %	2-dimethylaminoethanol
	< 3.0 %	Surfactant
	< 2.0 %	Catalyst
98-83-9	< 1.0 %	alpha-Methylstyrene

The product contains:

CAS Number	Content (W/W)	Chemical name
25265-71-8	< 5.0 %	dipropylene glycol
98-83-9	< 1.0 %	alpha-Methylstyrene

4. First-Aid Measures

Description of first aid measures

General advice:
Remove contaminated clothing.

If inhaled:
Keep patient calm, remove to fresh air, seek medical attention. Immediately administer a corticosteroid from a controlled/metered dose inhaler.

If on skin:
Immediately wash thoroughly with plenty of water, apply sterile dressings, consult a skin specialist.

If in eyes:
Immediately wash affected eyes for at least 15 minutes under running water with eyelids held open, consult an eye specialist.

If swallowed:
Immediately rinse mouth and then drink 200-300 ml of water, seek medical attention.

Most important symptoms and effects, both acute and delayed

Information on: diethylene glycol
Symptoms: Overexposure may cause:, vomiting, coma, abdominal cramps, lethargy, nausea, diarrhea, headache

---

Indication of any immediate medical attention and special treatment needed

with a heat source). Protect from direct sunlight. Keep in a cool, well-ventilated place. Avoid extreme heat. Store protected against freezing. Stored and transported in a cylinder under pressure. Must not be repacked by the customer.
Containers should be stored tightly sealed in a dry place.

Storage stability:
Storage temperature: 70 - 80 °F
Protect against moisture.
Store in unopened original containers in a cool and dry place.

8. Exposure Controls/Personal Protection

Advice on system design:
Provide local exhaust ventilation to control vapours/mists.

Personal protective equipment

Respiratory protection:
Wear a NIOSH-certified (or equivalent) organic vapour/particulate respirator as needed.

Hand protection:
Chemical resistant protective gloves

Eye protection:
Wear face shield or tightly fitting safety goggles (chemical goggles) if splashing hazard exists.

Body protection:
Standard work clothes and shoes.

General safety and hygiene measures:
Avoid contact with skin. Handle in accordance with good industrial hygiene and safety practice. Wear protective clothing as necessary to prevent contact. Avoid inhalation of vapours/mists. Wash soiled clothing immediately.

9. Physical and Chemical Properties

Form:	liquid	
Odour:	amine-like	
Odour threshold:		not applicable
Colour:	various, depending on the colourant	
pH value:	>= 7	
Freezing point:	< 0 °C	
Boiling point:	> 120 °C	
Sublimation point:		No applicable information available.
Flash point:	> 200 °F	(closed cup)
	> 93.3 °C	(closed cup)
Flammability:	not flammable	
Lower explosion limit:		For liquids not relevant for classification and labelling. The lower explosion point may be 5 - 15 °C below the flash point.
Upper explosion limit:		For liquids not relevant for classification and labelling.
Autoignition:	> 250 °C	
Vapour pressure:	< 10 mbar	(20 °C)

Routes of entry for solids and liquids are ingestion and inhalation, but may include eye or skin contact. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquefied gases.

Acute Toxicity/Effects

Acute toxicity
Assessment of acute toxicity: No known acute effects.

Assessment other acute effects
Assessment of STOT single:
Based on the available information there is no specific target organ toxicity to be expected after a single exposure.

Origin of data: expert judgement

Irritation / corrosion
Assessment of irritating effects: Skin contact causes irritation. May cause severe damage to the eyes.

Sensitization
Assessment of sensitization: The chemical structure does not suggest a sensitizing effect.

Aspiration Hazard
No aspiration hazard expected.

Chronic Toxicity/Effects

Repeated dose toxicity
Assessment of repeated dose toxicity: Repeated exposure may affect certain organs.

Genetic toxicity
Assessment of mutagenicity: The chemical structure does not suggest a specific alert for such an effect.

Carcinogenicity
Assessment of carcinogenicity: Indication of possible carcinogenic effect in animal tests.

Reproductive toxicity
Assessment of reproduction toxicity: The chemical structure does not suggest a specific alert for such an effect.

Teratogenicity
Assessment of teratogenicity: Indications of possible developmental toxicity/teratogenicity were seen in animal studies.

Other Information
The product has not been tested. The statement has been derived from the properties of the individual components.

Symptoms of Exposure

12. Ecological Information

14. Transport Information

Land transport
USDOT

Not classified as a dangerous good under transport regulations

Sea transport
IMDG

Not classified as a dangerous good under transport regulations

Air transport
IATA/ICAO

Not classified as a dangerous good under transport regulations

15. Regulatory Information

Federal Regulations

Registration status:
Chemical TSCA, US released / listed

EPCRA 311/312 (Hazard categories): Chronic;

State regulations

State RTK	CAS Number	Chemical name
PA	25265-71-8	dipropylene glycol
MA, NJ, PA	108-01-0	2-dimethylaminoethanol
MA, NJ, PA	98-83-9	alpha-Methylstyrene

CA Prop. 65:
THIS PRODUCT CONTAINS A CHEMICAL(S) KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER AND BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM.

NFPA Hazard codes:
Health : 3 Fire: 1 Reactivity: 1 Special:

HMIS III rating
Health: 3 Flammability: 1 Physical hazard: 1

16. Other Information

SDS Prepared by:
BASF NA Product Regulations
SDS Prepared on: 2014/07/08

We support worldwide Responsible Care® initiatives. We value the health and safety of our employees, customers, suppliers and neighbors, and the protection of the environment. Our

SAFETY DATA SHEET

Stainless Steel

Section 1 – Chemical Product and Company Identification

Product Identifier: Stainless Steel Products **MSDS Category:** SS

Other means of identification: None

WIRE-BOND **CAS Number:** Mixture

Phone Number (s): 724-226-5980 (M-F, 9 a.m.-4:30 p.m. EST)

Emergency Phone Number: 724-226-5555 **CHEMTREC** : 800-424-9300

Section 2 - Hazards Identification

As sold, this product, **Stainless Steel** (semi-finished steel products) is not hazardous according to the criteria specified in European Directives 67/548/EEC and 1999/45/EC. Under 29 CFR 1910.1200 Hazard Communication Standard, steel products are considered mixtures due to further processing which may produce dusts and or fumes. Refer to Secti on 3 and 8 for additional information. Refer to Section 11 for T oxicological Information.

Statement/Emergency Overview: Odorless solid product in various forms, silver-gray color. This formed solid metal product poses little or no immediate health or fire hazards. Product may be coated - refer to appropriate coating MSDS for physical and health hazards.

Section 3 – Composition/Information on Ingredients

Chemical Identity of Regulated Substances under 29 CFR 1910.1200 (Hazard Communication Standard):

Ingredient Name	EC Number	CAS Number	% weight
Iron	231-096-4	7439-89-6	Balance
Nickel	231-111-4	7440-02-0	0-46
Chromium	231-157-5	7440-47-3	10-30
Molybdenum	231-107-2	7439-98-7	0-7.0
Copper	231-159-6	7440-50-8	0-4.0
Manganese	231-105-1	7439-96-5	0-10
Silicon	231-130-8	7440-21-3	0-6.5
Aluminum	231-072-3	7429-90-5	0-4.0
Vanadium	231-171-1	7440-62-2	0-1.1
Boron	231-151-2	7440-42-8	0 – 2.25
Tungsten	231-143-9	7440-33-7	0 – 2.5
Titanium	231-142-3	7440-32-6	0-2.4
Cladding/Core (carbon steel)			
Carbon	231-153-3	7440-44-0	0.01–0.025
Manganese	231-105-1	7439-96-5	0.3 max
Aluminum	231-072-3	7429-90-5	0.02–0.07
Titanium	231-142-3	7440-32-6	0.07–0.095
Columbium	231-113-5	7440-03-1	0.02–0.04
Iron	231-096-4	7439-89-6	Balance
Chemical Identity of Substances Not Regulated under 29 CFR 1910.1200 (Hazard Communication Standard), but offered as information for grade(s):			
Tantalum	231-135-5	7440-25-7	0 – 1.0
Columbium (Niobium)	231-113-5	7440-03-1	0-1.0

EC - European Community **CAS** - Chemical Abstract Service

- All commercial metals may contain small amounts of various elements in addition to those specified. These small quantities (les s than 0.1%) frequently referred to as "trace" or "residual" elements, generally originate in the raw material used. These elements may include, but are not limited to the following: Arsenic, Boron, Cadmium, Calcium, Cobalt, Lead, Nitrogen, Phosphorous, Sulfur, Tin and Zirconium.

Section 4 - First Aid Measures

Description of necessary first aid measures:

- **Inhalation:** If large amounts of dusts, fumes, or particulates are generated, move person to fresh air. If symptoms develop, seek medical attention.
- **Eye Contact:** For contact with dusts or particulates, flush eyes with water for 15 minutes. Eye injuries from solid particles should be treated by a physician immediately.
- **Skin Contact:** For skin contact with dusts or powders, wash immediately with soap and water. Cuts or abrasions should be treated promptly with thorough cleansing of the affected area.
- **Ingestion:** No need for first aid is anticipated if material is swallowed, however if symptoms develop, seek medical attention. For Ingestion of Dusts: IF SWALLOWED: Call a poison center or Doctor/physician if you feel unwell. Rinse mouth.

Most important acute and chronic symptoms/effects:

Primary Entry Routes: Stainless Steel (semi-finished steel products) products in their usual physical form do not present an inhalation, ingestion or contact hazard. However, operations such as burning, welding, sawing, brazing, machining and grinding may result in the following effects if exposures exceed recommended limits as listed in Section 8.

Target Organs: Respiratory system

te Effects:

Excessive exposure to high concentrations of dust may cause irritation to the eyes, skin and mucous membranes of the upper respiratory tract. Excessive inhalation of fumes of freshly formed metal oxide particles sized below 1.5 microns and usually between 0.02-0.05 microns from many metals can produce an acute reaction known as “metal fume fever”. Symptoms consist of chills and fever (very similar to and easily confused with flu symptoms), metallic taste in the mouth, dryness and irritation of the throat followed by weakness and muscle pain. The symptoms come on in a few hours after excessive exposures and usually last from 12 to 48 hours. Long-term effects from metal fume fever have not been noted. Freshly formed oxide fumes of manganese have been associated with causing metal fume fever.

- **Eye:** Excessive exposure to high concentrations of dust may cause irritation and/or sensitization to the eyes. Particles of iron or iron compounds, which become imbedded in the eye, may cause rust stains unless removed promptly. Molybdenum compounds are eye irritants.
- **Skin:** Repeated or prolonged contact with dusts may cause skin irritation or sensitization, possibly leading to dermatitis. Skin contact with metallic fumes and dusts may cause physical abrasion. Exposure to nickel may cause contact and atopic dermatitis and allergic sensitization.
- **Ingestion:** Ingestion of harmful amounts of this product as distributed is unlikely due to its solid insoluble form. Ingestion of dust may cause nausea or vomiting.

Acute Effects by component:

- **IRON:** Iron is harmful if swallowed, causes skin irritation, and causes eye irritation.
- **NICKEL:** Nickel may cause allergic skin sensitization.
- **CHROMIUM (as Hexavalent Chrome):** Hexavalent chrome causes damage to gastrointestinal tract, lung, severe skin burns and eye damage, serious eye damage, skin contact may cause an allergic skin reaction, inhalation may cause allergic or asthmatic symptoms or breathing difficulties.
- **MOLYBDENUM:** Molybdenum causes skin and eye irritation.
- **COPPER:** Copper may cause allergic skin reaction.
- **MANGANESE:** Manganese is harmful if swallowed.
- **SILICON:** May be harmful if swallowed
- **ALUMINUM:** Not Reported/ Not Classified
- **VANADIUM (as Vanadium Oxide):** Vanadium oxide is fatal if swallowed or inhaled, and may be harmful in contact with skin.
- **BORON:** Harmful if swallowed.
- **TUNGSTEN :** May cause eye and Skin irritation due to the abrasive effect of the dust
- **TITANIUM:** Not Reported/ Not Classified

Chronic Effects by component:

- **IRON (as Iron Oxide)**: Chronic inhalation of excessive concentrations of iron oxide fumes or dusts may result in the development of a benign pneumoconiosis, called siderosis, which is observable as an X-ray change. No physical impairment of lung function has been associated with siderosis. Inhalation of excessive concentrations of ferric oxide may enhance the risk of lung cancer development in workers exposed to pulmonary carcinogens. Iron oxide is listed as a Group 3 (not classifiable) carcinogen by IARC.
- **NICKEL:** Exposure to nickel dusts and fumes can cause sensitization dermatitis, respiratory irritation, asthma, pulmonary fibrosis, edema and may cause nasal or lung cancer in humans. Causes damage to lungs through prolonged or repeated inhalation exposure. IARC lists nickel and certain nickel compounds as Group 2B carcinogens (sufficient animal data). ACGIH 2014 TLVs® and BEIs® lists insoluble nickel compounds as confirmed human carcinogens. Suspected of damaging the unborn child.
- **COPPER**: Inhalation of high concentrations of freshly formed oxide fumes and dusts of copper can cause metal fume fever. Chronic inhalation of copper dust has caused, in animals, hemolysis of the red blood cells, deposition of hemofuscin in the liver and pancreas, injury to lung cells and gastrointestinal symptoms.

Section 4 - First Aid Measures (continued)

Chronic Effects by component (continued):

- **CHROMIUM:** The health hazards associated with exposure to chromium are dependent upon its oxidation state. The metal form (chromium as it exists in this product) is of very low toxicity. The hexavalent form is very toxic. Repeated or prolonged exposure to hexavalent chromium compounds may cause respiratory irritation, nosebleed, ulceration and perforation of the nasal septum. Industrial exposure to certain forms of hexavalent chromium has been related to an increased incidence of cancer. NTP (The National Toxicology Program) Fourth Annual report on Carcinogens cites "certain Chromium compounds" as human carcinogens. ACGIH has reviewed the toxicity data and concluded that chromium metal is not classifiable as a human carcinogen. Hexavalent chromium may cause genetic defects and is suspected of damaging the unborn child. Developmental toxicity in the mouse, suspected of damaging fertility or the unborn child.
- **MOLYBDENUM:** Certain handling operations, such as burning and welding, may generate both insoluble molybdenum compounds (metal and molybdenum dioxide) and soluble molybdenum compounds (molybdenum trioxide). Molybdenum compounds generally exhibit a low order of toxicity with the trioxide the more toxic. However, some reports indicate that the dust of the molybdenum metal, molybdenum dioxide and molybdenum trioxide may cause eye, skin, nose and throat irritation in animals. Also has been reported to cause induction of tumors in experimental animals, suspected of causing cancer. Molybdenum oxide is suspected of causing cancer in humans.
- **MANGANESE:** Chronic exposure to high concentrations of manganese fumes and dusts may adversely affect the central nervous system with symptoms including languor, sleepiness, weakness, emotional disturbances, spastic gait, mask-like facial expression and paralysis. Animal studies indicate that manganese exposure may increase susceptibility to bacterial and viral infections. Occupational overexposure (Manganese) is a progressive, disabling neurological syndrome that typically begins with relatively mild symptoms and evolves to include altered gait, fine tremor, and sometimes psychiatric disturbances. May cause damage to lungs with repeated or prolonged exposure.
- **SILICON:** Silicon dusts are a low health risk by inhalation and should be treated as a nuisance dust. Eye contact with pure material can cause particulate irritation. Skin contact with silicon dusts may cause physical abrasion.
- **ALUMINUM**: Chronic inhalation of finely divided powder has been reported to cause pulmonary fibrosis and emphysema. Repeated skin contact has been associated with bleeding into the tissue, delayed hypersensitivity and granulomas. Chronic exposure to aluminum flake has been reported to cause pneumoconiosis in workers. Repeat oral exposure to aluminum results in decrements in neurobehavioral function and development.
- **VANADIUM:** Vanadium is considered non-toxic. Excessive long term or repeated exposures to vanadium compounds, especially vanadium pentoxide, may result in chronic pulmonary changes such as emphysema or bronchitis. Vanadium pentoxide is suspected of damaging fertility or the unborn child. Vanadium pentoxide is fatal if swallowed or inhaled. It causes damage to lungs by single, repeated or prolonged exposure.
- **BORON**: Boron oxide dusts and fumes may cause upper respiratory tract and eye irritation, dryness of the mouth, nose or throat, and sore throat and productive cough.
- **TUNGSTEN:** Tungsten has been shown to act by antagonizing the action of the essential trace element, Molybdenum. Tungsten metal powder administered to animals has been shown in several studies as not totally inert. One study found that guinea pigs treated orally or intravenously with tungsten suffered from anorexia, colic, incoordination of movement, trembling, dyspnea and weight loss. Long industrial experience has indicated no pneumoconiosis to develop among workers exposed solely to tungsten or its insoluble compounds (at air concentrations of the order of 5 mg/m3). In NIOSH's criteria document, two Russian studies were cited which indicated and incidence of 9-11% pulmonary fibrosis among employees exposed to tungsten without cobalt co-exposure.
- **TITANIUM:** There is no evidence of a health hazard from inhalation of titanium dioxide at airborne concentrations below 10 mg/m3. Rats (but not mice) exposed to ultrafine TiO2 particles at 10 mg/m3 developed lung tumors; probably results from inhibited particle clearance from lung. The toxicity of titanium dioxide has been found to be relatively inert. Eye contact with pure material can cause particulate irritation. Skin contact with titanium dusts may cause physical abrasion

Long-term inhalation exposure to high concentrations (over-exposure) to pneumoconiotic agents may act synergistically with inhalation of oxides, fumes or dusts of this product to cause toxic effects.

Carcinogenicity: IARC, NTP, and OSHA do not list steel products as carcinogens. IARC identifies nickel and certain nickel compounds and welding fumes as Group 2B carcinogens that are possibly carcinogenic to humans. ACGIH lists insoluble nickel compounds as confirmed human carcinogens. IARC lists chromium metal and trivalent chromium compounds as Group 3 carcinogens, not classifiable as to their human carcinogenicity. Hexavalent chromium compounds are listed by IARC as Group 1 carcinogens that are carcinogenic to humans. NTP Fourth Annual report on Carcinogens cites "certain Chromium compounds" as human carcinogens. ACGIH has reviewed the toxicity data and concluded that chromium metal is not classifiable as a human carcinogen.

Medical Conditions Aggravated by Long-Term Exposure: Individuals with chronic respiratory disorders (i.e., asthma, chronic bronchitis, emphysema, etc.) may be adversely affected by any fume or airborne particulate matter exposure.

SARA Potential Hazard Categories: Immediate Acute Health Hazard; Delayed Chronic Health Hazard

Section 5 – Fire and Explosion Hazard Information

Suitable Extinguishing Media: Not applicable for solid product. Use extinguishers appropriate for surrounding materials. For fines, use a Type-D fire extinguisher or table salt to control small fires. Stainless steel will generate fine turnings, chips or dust. Warning: May Form Combustible (Explosive) Dust - Air Mixtures. Keep away from all ignition sources including heat, sparks, and flame. Keep container closed and grounded. Prevent dust accumulations to minimize explosion hazard.

Specific Hazards arising from the chemical: Not applicable for solid product.

Explosion hazard: Accumulated metal dust can be combustible. Avoid creating dust.

Section 5 – Fire and Explosion Hazard Information (continued)

Special protective equipment and precautions for fire fighters: Self-contained MSHA/NIOSH approved respiratory protection and full protective clothing should be worn when fumes and/or smoke from fire are present. Heat and flames cause emittance of acrid smoke and fumes.

Section 6 - Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures: Not applicable to steel in solid state. For spills involving finely divided particles, clean-up personnel should be protected against contact with eyes and skin Collect material in appropriate, labeled containers for recovery or disposal in accordance with federal, state, and local regulations.

vironmental precautions: Not applicable to steel in solid state. Follow applicable federal, state, and local regulations

ethods and materials for containment and clean up: Collect material in appropriate, labeled containers for recovery or disposal in accordance with federal, state, and local regulations. Follow applicable OSHA regulations (29 CFR 1910.120) and all other pertinent state and federal requirements.

Section 7 - Handling and Storage

Precautions for safe handling: Operations with the potential for generating concentrations above ½ the PEL of airborne particulates should be evaluated and controlled as necessary. Practice good housekeeping. Avoid breathing metal fumes and/or dust.

, including any incompatibilities: Store away from acids and incompatible materials.

Section 8 - Exposure Controls / Personal Protection

Occupational Exposure Limits (OELs): This product in its physical form as sold does not present an inhalation, ingestion or contact hazard, nor would any of the following exposure data apply. However, operations such as high temperature (burning, welding), sawing, brazing, machining and grinding may produce fumes and/or particulates. The following exposure limits are offered as reference, for an experienced industrial hygienist to review.

Ingredients	OSHA PEL [1]	ACGIH TLV [2]	NIOSH REL [3]	IDLH [4]
Iron	10 mg/m³ (as iron oxide fume)	5.0 mg/m³ (as iron oxide dust and fume)	5.0 mg/m³ (as iron oxide dust and fume)	2,500 mg Fe/m3
Nickel	1.0 mg/m³ (as Ni metal & insoluble compounds)	1.5 mg/m³ (as inhalable fraction Ni metal)	0.015 mg/m³ (as Ni metal & insoluble and soluble	10 mg/m³ (as Ni)
Chromium	0.5 mg/m³ (as Cr II & III, inorganic compounds)	0.5 mg/m³ (as Cr III, inorganic compounds)	0.5 mg/m³ (as Cr II & III, inorganic compounds)	250 mg/m³ (as Cr II & metal)
Molybdenum	15 mg/m³ (as total dust, PNOR) 6 5.0 mg/m³ (as respirable fraction,	10 mg/m³ (as Mo insoluble compounds, inhalable fraction)	NE	NE
Copper	0.1 mg/m³ (as fume, Cu)	0.1 mg/m³ (as fume)	1.0 mg/m³ (as dusts & mists)	100 mg Cu/m3
Manganese	"C" 5.0 mg/m³ (as Fume & Mn compounds)	0.2 mg/m³	"C" 5.0 mg/m³	500 mg Mn/m3
Silicon	15 mg/m³ (total dust, PNOR) 5.0 mg/m³ (as respirable fraction,	10 mg/m³	10 mg/m³ (as total dust) 5.0 mg/m³ (as respirable	NE
Aluminum	15 mg/m³ (as total dust, PNOR) 5.0 mg/m³ (as respirable fraction,	10 mg/m³ (as metal dust) 5.0 mg/m³ (as welding fume)	10 mg/m³ (as total dust) 5.0 mg/m³ (as respirable	NE
Vanadium	"C" 0.5 mg/m³ (as V2O5, respirable dust) "C" 0.1 mg/m³ (as V2O5, fume)	0.05 mg/m³ (as V2O5, inhalable fraction)	"C" 0.05 mg/m³ (as V2O5, total dust or fume)	35 mg/m³ (as V, dust or fume)
Boron	15 mg/m³ (as total dust, boron oxide)	10 mg/m³ (as boron oxide)	10 mg/m3 (as boron oxide)	2,000 mg/m3 (as boron

Section 8 - Exposure Controls / Personal Protection (continued)

Ingredients	OSHA PEL [1]	ACGIH TLV [2]	NIOSH REL [3]	IDLH [4]
Tungsten	NE	5.0 mg/m³ 10 mg/m³	5.0 mg/m³ "STEL" 10 mg/m	NE
Titanium	15 mg/m³ (as TiO2, total dust)	10 mg/m³ (as TiO2)	LFC (as TiO2) 8	5,000 mg/m3 (as TiO2)

NE - None Established

tes:

1. OSHA PELs (Permissible Exposure Limits) are 8-hour TWA (time-weighted average) concentrations unless otherwise noted. A ("C") designation denotes a Ceiling Limit, which should not be exceeded during any part of the working exposure unless otherwise noted. A Short Term Exposure Limit (STEL) is defined as a 15-minute exposure, which should not be exceeded at any time during a workday.
2. Threshold Limit Values (TLV) established by the American Conference of Governmental Industrial Hygienists (ACGIH) are 8-hour TWA concentrations unless otherwise noted.

4. The "immediately dangerous to life or health air concentration values (IDLHs)" are used by NIOSH as part of the respirator selection criteria and were first developed in the mid-1970's by NIOSH. The Documentation for Immediately Dangerous to Life or Health Concentrations (IDLHs) is a compilation of the rationale and sources of information used by NIOSH during the original determination of 387 IDLHs and their subsequent review and revision in 1994.
5. Inhalable fraction. The concentration of inhalable particulate for the application of this TLV is to be determined from the fraction passing a size-selector with the characteristics defined in the ACGIH 2014 TLVs ® and BEIs ® (Biological Exposure Indices) Appendix D, paragraph A.
6. PNOR (Particulates Not Otherwise Regulated). All inert or nuisance dusts, whether mineral, inorganic, or organic, not listed specifically by substance name are covered by the PNOR limit which is the same as the inert or nuisance dust limit of 15 mg/m3 for total dust and 5.0 mg/m3 for the respirable fraction (containing less than 1% crystalline silica).

propriate Engineering Controls: Use engineering controls as appropriate to minimize exposure to metal fumes and dusts during handling operations. Provide general or local exhaust ventilation systems to minimize airborne concentrations. Local exhaust is necessary for use in enclosed or confined spaces. Provide sufficient general/local exhaust ventilation in pattern/volume to control inhalation exposures below current exposure limits.

Protective Equipment (PPE)

- **Respiratory Protection:** Seek professional advice prior to respirator selection and use. Follow OSHA respirator regulations (29 CFR 1910.134) and, if necessary, use only a NIOSH-approved respirator. Select respirator based on its suitability to provide adequate worker protection for given working conditions, level of airborne contamination, and presence of sufficient oxygen. Concentration in air of the various contaminants determines the extent of respiratory protection needed. Half-face, negative-pressure, air-purifying respirator equipped with P100 filter is acceptable for concentrations up to 10 times the exposure limit. Full-face, negative-pressure, air-purifying respirator equipped with P100 filter is acceptable for concentrations up to 50 times the exposure limit. Protection by air-purifying negative-pressure and powered air respirators is limited. Use a positive-pressure-demand, full-face, supplied air respirator or self contained breathing apparatus (SCBA) for concentrations above 50 times the exposure limit. If exposure is above the IDLH (Immediately dangerous to life or health) for any of the constituents, or there is a possibility of an uncontrolled release or exposure levels are unknown, then use a positive-demand, full-face, supplied air respirator with escape bottle or SCBA.

ning! Air-purifying respirators both negative-pressure, and powered-air do not protect workers in oxygen-deficient atmospheres.

Protective Clothing/Equipment:

es: Wear appropriate eye protection to prevent eye contact. For operations, which result in elevating the temperature of the product to or above its melting point or result in the generation of airborne particulates, use safety glasses or goggles to prevent eye contact. Contact lenses should not be worn where industrial exposures to this material are likely. Use safety glasses or goggles as required for welding, burning, sawing, brazing, grinding or machining operations.

: Wear appropriate personal protective clothing to prevent skin contact. Cut resistant gloves and sleeves should be worn when working with steel products. For operations, which result in elevating the temperature of the product to or above its melting point or result in the generation of airborne particulates, use protective clothing, and gloves to prevent skin contact. Protective gloves should be worn as required for welding, burning or handling operations.

er protective equipment: An eyewash fountain and deluge shower should be readily available in the work area when operations which could result in fumes and/or particulates are being performed.

Section 9 - Physical and Chemical Properties

Appearance and Odor: Silver-gray metallic solid form, odorless
Odor Threshold: NA
Vapor Pressure: Negligible
Vapor Density (Air=1): NA
Formula Weight: NA
Density: NA

Water Solubility: Insoluble
Fat Solubility: NA
Other Solubilities: NA
Boiling Point: NIF for steel product (Fe-5432/Cr-3992/Ni-5252 oF)
Viscosity: NA
Refractive Index: NA

Section 9 - Physical and Chemical Properties (continued)

Specific Gravity (H_2O=1, 60°F): 7-9
pH: NA
Flash Point (closed cup): NA
Auto-ignition Temperature: NA
Decomposition Temperature: ND
Partition Coefficient n-octanol/water: ND
Flammability (solid, gas): Non-flammable
Explosive Properties: ND

Surface Tension: NA
% Volatile by volume: NA
Evaporation Rate: NA
Freezing Point: NA
Melting Point: : 2500-2800 oF
UEL: NA
LEL: NA
Oxidizing Properties: ND

NA - Not Applicable ND - Not determined for product as a whole

Section 10 - Stability and Reactivity

Reactivity: Not Determined (ND) for product as a whole.

Stability: Steel products are stable under normal storage and handling conditions.

merization: Hazardous polymerization cannot occur.

Will react with strong acids to form hydrogen. Iron oxide dusts in contact with calcium hypochlorite evolve oxygen and may cause an explosion.

Storage with strong acids or calcium hypochlorite

ardous Decomposition/Combustion Products: Thermal oxidative decomposition of steel products can produce fumes containing oxides of iron and manganese as well as other alloying elements.

Mechanical Impact: ND

atic Discharge: ND

Section 11 - Toxicological Information

Toxicological information has not been established for this product as sold. However, processing of this product in operations such as high temperature (burning, welding), sawing, brazing, machining and grinding may produce fumes and/or particulates, which would result in the material being classified as hazardous under OSHA 29 CFR 1910.1200. The categories of Health Hazards as defined in "GLOBALLY HARMONIZED SYSTEM OF CLASSIFICATION AND LABELLING OF CHEMICALS (GHS), Third revised edition ST/SG/AC.10/30/Rev. 3"

Potential Hazard	Hazard Category	Hazard Symbol	Signal Word	Hazard Statement
Acute Toxicity Hazard	4 a		**Warning**	Harmful if swallowed
Skin Irritation	3 b			Causes skin irritation
Eye Damage/ Irritation	2B c	No Symbol	**Warning**	Causes eye irritation
Skin Sensitization	1 d		**Warning**	May cause an allergic skin reaction
Carcinogenicity	2 g		**Warning**	Suspected of causing cancer
Toxic Reproduction	2 h		**Warning**	Suspected of damaging the unborn child
Specific Target Organ Systemic Toxicity (STOST) following Single Exposure	3 i		**Warning**	May cause respiratory irritation
STOST following Repeated Exposure	1 j		**Danger**	Causes damage to lungs through prolonged or repeated inhalation exposure.

Notes:

a. No **LC_{50} or LD_{50}** has been established for **Stainless Steel** (semi-finished steel products). The following data has been determined for the components:

- **Iron:** LD50= 1060 mg/kg (Oral/ Rat)
- **Manganese:** Mn single oral exposures, LD50 ranged from 275 to 804 mg/kg body weight per day for manganese chloride in different rat strains
- **hromium (as Cr $^{+VI}$):** LD50 = 80 mg/kg (Oral/Rat)
- **Silicon:** LD50 = 3160 mg/kg (Oral/Rat); and as **Silicon Doxide:** LD50 > 15,000 mg/kg (Oral/Rat) ; LD50 > 5000 mg/kg (Dermal/Rat); LC50 > 0.69 mg/l/4hr (Inhalation/Rat)
- **el:** LD50 > 9000 mg/kg (Oral/Rat); LC50 > 10.2 mg/l (Inhalation/Rat)
- **Boron:** LD = 650 mg/kg (Oral/Rat)

Section 11 - Toxicological Information (continued)

b. No **Skin (Dermal) Irritation** data available for **Stainless Steel** (semi-finished steel products) as a mixture. The following Skin (Dermal) Irritation information was found for the components:

- **Iron**: Causes skin irritation
- **Chromium (as Cr $^{+VI}$):** Corrosive. Human skin sensitizer
- **Nickel**: Slight irritation only in rabbits
- **Molybdenum:** Irritating
- **Tungsten:** Skin contact may cause irritation due to abrasive action of the dust

c. No **Eye Irritation** data available for **Stainless Steel** (semi-finished steel products) as a mixture. The following Eye Irritation information was found for the components:

- **Iron, Molybdenum:** Causes eye irritation
- **Silicon:** Slight eye irritation in rabbit protocol
- **Chromium (as Cr $^{+VI}$):** Corrosive
- **Nickel:** Slight eye irritation from particulate abrasion only.
- **Tungsten:** Eye contact may cause irritation due to abrasive action of the dust

d. No **Skin (Dermal) Sensitization** data available for **Stainless Steel** (semi-finished steel products) a mixture. The following Skin (Dermal) Sensitization information was found for the components:

- **Nickel**: Human skin sensitizer
- **Copper, Chromium (as Cr $^{+VI}$):** May cause allergic skin reaction
- **Copper:** It is reported that copper may induce allergic contact dermatitis in susceptible individuals

e. No **Respiratory Sensitization** data available for **Stainless Steel** (semi-finished steel products) a mixture. The following Respiratory Sensitization information was found for the components:

- **Chromium (as Cr $^{+VI}$):** Occupational asthma reported in workers

f. No **Germ Cell Mutagenicity** data available for **Stainless Steel** (semi-finished steel products) as a mixture. The following Mutagenicity and Genotoxicity information was found for the components:

- **Iron:** Some positive and negative findings in vitro
- **Chromium (as Cr $^{+VI}$):** Positive in in vitro and in vivo assays including cell transformation in vitro and dominant lethal in vivo
- **Nickel**: Positive results *in vitro and in vivo* but insufficient data for classification
- **Aluminum:** Not mutagenic *in vitro*; but has marginal effects *in vivo*

g. **Carcinogenicity**: IARC, NTP, and OSHA do not list **Stainless Steel** (semi-finished steel products) as carcinogens. The following Carcinogenicity information was found for the components:

- **Welding Fumes**, IARC Group 2B carcinogen, a mixture that is possibly carcinogenic to humans.
- **Nickel and certain nickel compounds** - IARC Group 2B carcinogens that are possibly carcinogenic to humans. Insoluble nickel compounds - ACGIH confirmed human carcinogen. Nickel - EURAR Insufficient evidence to conclude carcinogenic potential in animals or humans; suspect carcinogen classification Category 2 Suspected of causing cancer. Nickel Oxide – HSDB listed as Category 1a, may cause cancer. Human data in which exposure to nickel refinery dust caused lung and nasal tumors.

  metal and trivalent chromium compounds - IARC Group 3 carcinogens, not classifiable as to their human carcinogenicity. Hexavalent chromium compounds - IARC as Group 1 carcinogens, carcinogenic to humans. Chromium metal - ACGIH not classifiable as a human carcinogen. NTP Fourth Annual report on Carcinogens cites "certain Chromium compounds" as human carcinogens.

h. No **Toxic Reproduction** data available for **Stainless Steel** (semi-finished steel products) as a mixture. The following Toxic Reproduction information was found for the components:

- **Hexavalent Chromium**: Developmental toxicity in the mouse.
- **Nickel**: Oral administration to experimental animals caused fetotoxicity.
- **Aluminum**: May cause delay in development of neurobehavioral indices.

i. No **Specific Target Organ Systemic Toxicity (STOST) following a Single Exposure** data available for **Stainless Steel** (semi-finished steel products) as a mixture. The following STOST following a Single Exposure data was found for the components:

- **Iron, Molybdenum**: May cause respiratory irritation.

j. No **Specific Target Organ Systemic Toxicity (STOST) following Repeated Exposure** data was available for **Stainless Steel** (semi-finished steel products) as a whole. The following STOST following Repeated Exposure data was found for the components:

- **Aluminum:** Chronic exposure to aluminum flake has been reported to cause pneumoconiosis in workers. Repeat oral exposure to aluminum results in decrements in neurobehavioral function and development.

  : Neurobehavioral alterations in worker populations with Mn and MnO including: speed and coordination of motor function
- **Hexavalent Chrome:** Inflammation of lung, skin irritation and ulceration with repeat exposures in workers.

  el: Rats exposed to Nickel by inhalation at 1 mg/m3 for 90 days developed lung inflammation, hyperplasia and fibrosis.

  Mice exposed to amorphous boron at 72 mg/m3 for 6 weeks did not exhibit toxicity

The above toxicity information was determined from available scientific sources to illustrate the prevailing posture of the scientific community. The scientific resources includes: The American Conference of Governmental Industrial Hygienist (ACGIH) Documentation of the Threshold Limit Values (TLVs) and Biological Exposure indices (BEIs) with Other Worldwide Occupational Exposure Values 2009, The International Agency for Research on Cancer (IARC), The National Toxicology Program (NTP) updated documentation, the World Health Organization (WHO) and other available resources, the International Uniform Chemical Information Database (IUCLID), European Union Risk Assessment Report (EU-RAR), Concise International Chemical Assessment Documents (CICAD), European Union Scientific Committee for Occupational Exposure Limits (EU-SCOEL), Agency for Toxic Substances and Disease Registry (ATSDR), Hazardous Substance Data Bank (HSDB), and International Programme on Chemical Safety (IPCS).

Section 12 - Ecological Information

Hazard Category: Not Reported
Hazard Symbol: No Symbol
No Signal Word
ard Statement: No Hazard Statement

y: No data available for the product, **Stainless Steel** (semi-finished steel products) as a whole. However, individual components of the product have been found to be toxic to the environment. Metal dusts may migrate into soil and groundwater and be ingested by wildlife as follows:

avalent Chrome: EC50 and LD50 to algae and invertebrates < 1 mg.

- **Aluminum:** LC50> 100 mg/l for fish and algae

y: No data available for the product, **Stainless Steel** (semi-finished steel products) as a whole. However, individual components of the product have been found to be absorbed by plants from soil.

e & Degradability: No Data Available

Bioaccumulative Potential: No Data Available

Note: The listing of regulations relating to an ATI product may not be complete and should not be solely relied upon for all regulatory compliance responsibilities.

Section 13 - Disposal Considerations

Disposal: Steel scrap should be recycled whenever possible. Product dusts and fumes from processing operations should also be recycled, or classified by a competent environmental professional and disposed of in accordance with applicable federal, state or local regulations.

r Cleaning and Disposal: Follow applicable Federal, state and local regulations. Observe safe handling precautions. European Waste Catalogue (EWC): 16-01-17 (ferrous metals), 12-01-99 (wastes not otherwise specified), 16 03 (off specification batches and unused products), or 15 01 04 (metallic packaging).

Please note this information is for Stainless Steel in its original form. Any alterations can void this information.

Section 14 - Transport Information

DOT Transportation Data (49 CFR 172.101):

US Department of Transportation (DOT) under 49 CFR 172 does not regulate **Stainless Steel** (semi-finished steel products) as a hazardous material. All federal, state, and local laws and regulations that apply to the transport of this type of material must be adhered to.

: Not Applicable (NA) **Shipping Symbols:** NA **ard Class:** NA **:** Not applicable NA NA **ns (172.102):** NA	**Packaging Authorizations** **a) Exceptions:** NA **oup:** NA **c) Authorization:** NA	**Quantity Limitations** **a) Passenger, Aircraft, or Railcar:** NA **:** NA **ssel Stowage Requirements** **a) Vessel Stowage:** NA **r:** NA : NA

The International Maritime Dangerous Goods (IMDG) and the Regulations Concerning the International Carriage of Dangerous Goods by Rail (RID) classification, packaging and shipping requirements follow the US DOT Hazardous Materials Regulation.

Regulations Concerning the International Carriage of Dangerous Goods by Road does not regulate **Stainless Steel** (semi-finished steel products) as a hazardous material.

Shipping Name: Not Applicable (NA) **ode:** NA **:** Not applicable NA NA **ns:** NA NA	**Packaging** **a) Packing Instructions:** NA **Packing Provisions:** NA **Packing Provisions:** NA	**Portable Tanks & Bulk Containers** **a) Instructions:** NA **Provisions:** NA

IATA – International Air Transport Association (IATA) does not regulate **Stainless Steel** (semi-finished steel products) as a hazardous material.

Shipping Name: Not Applicable (NA) NA **ard Label (s):** NA **:** NA **Packing Group:** NA **Q):** NA	**Passenger & Cargo Aircraft Limited Quantity (EQ)**		**Cargo Aircraft Only** **Pkg Inst:** NA **Qty/Pkg:**	**Special Provisions:** NA NA
	Pkg Inst: NA **Max Net Qty/Pkg:** NA	**Pkg Inst:** NA **Qty/Pkg:**		

Pkg Inst – Packing Instructions Max Net Qty/Pkg – Maximum Net Quantity per Package ERG – Emergency Response Drill Code

Transport Dangerous Goods (TDG) Classification: Stainless Steel (semi-finished steel products) does not have a TDG classification.

Section 15 - Regulatory Information

Regulatory Information: *The following listing of regulations relating to an ATI Flat Rolled Products (formerly ATI Allegheny Ludlum) product may not be complete and should not be solely relied upon for all regulatory compliance responsibilities.*

This product and/or its constituents are subject to the following regulations:

Air Contaminant (29 CFR 1910.1000, Table Z-1, Z-2, Z-3): The product, **Stainless Steel** (semi-finished steel products) as a whole is not listed. However, individual components of the product are listed: Refer to Section 8, Exposure Controls and Personal Protection

A Regulations: Stainless Steel (semi-finished steel products) is not listed as a whole. However, individual components of the product are listed:

Components	Regulations
Copper	CWA, CERCLA, SDWA, SARA 313
Chromium	CAA, CWA, SARA 313, SDWA, CERCLA, RCRA
Nickel	CAA, CWA, SARA 313, CERCLA, RCRA, SDWA
Manganese	SARA 313, CAA, CERCLA, SDWA
Vanadium	SARA 313
	SWDA, SARA 313
Molybdenum	SDWA

ard Categories: Immediate Acute Health Hazard; Delayed Chronic Health Hazard

ulations Key:

CAA Clean Air Act (42 USC Sec. 7412; 40 CFR Part 61 [As of: 8/18/06])

tion: This product, **Stainless Steel** (semi-finished steel products) contains the following toxic chemicals subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR part 372:

CAS #	Chemical Name	Max Percent by Weight
7440-47-3	Chromium	30
7440-02-0	Nickel	46
7440-50-8	Copper	4
7439-96-5	Manganese	10
		1.1
7429-90-5	Aluminum	4

This information should be included in all MSDSs that are copied and distributed for this material.

State Regulations: The product, **Stainless Steel** (semi-finished steel products) as a whole is not listed in any state regulations. However, individual components of the product are listed in various state regulations:

Pennsylvania Right to Know: Contains regulated material in the following categories:

ss Steel (semi-finished steel products) may possibly contain trace quantities (generally much less than 0.1%) of metallic elements known to the State of California to cause cancer or reproductive toxicity. These include chromium and nickel.

- Hazardous Substance List: Iron Oxide (fume), Silicon, Titanium, Molybdenum, Vanadium, Tantalum, Tungsten, Aluminum (dust and fume), Chromium, Nickel, Manganese, Boron, and Copper
- Environmental Hazards: Tungsten, Nickel, Cobalt, and Chromium compounds

Massachusetts: Aluminum (dust and fume), Silicon (dust), Nickel, Copper, Cobalt, Chromium (compounds), Manganese, Vanadium Molybdenum, Tungsten, and Iron

Section 15 - Regulatory Information (continued)

Other Regulations:

adian): Stainless Steel (semi-finished steel products) is not listed as a whole. However individual components are listed.

Ingredients	WHMIS Classification
Iron	B4, D2B
	B4, D2B

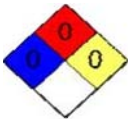
Section 16 – Other Information

Hazardous Material Identification System (HMIS) Classification

Health Hazard	0
Fire Hazard	0
Physical Hazard	0

HEALTH = **0**, No significant risk to health.
, Materials that will not burn
PHYSICAL HAZARDS = **0**, Materials that are normally stable, even under fire conditions,

National Fire Protection Association (NFPA)



HEALTH = **0**, No hazard beyond that of ordinary combustible materials.
Materials that will not burn
INSTABILITY = **0**, Normally stable, even under fire exposure conditions, and are not reactive with water.

ABBREVIATIONS/ACRONYMS:

H	American Conference of Governmental Industrial Hygienists
BEIs	Biological Exposure Indices
CAS	Chemical Abstracts Service
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CNS	Central Nervous System
GI, GIT	Gastro-Intestinal, Gastro-Intestinal Tract
HMIS	Hazardous Materials Identification System
IARC	International Agency for Research on Cancer
LC50	Median Lethal Concentration
LD50	Median Lethal Dose
LD $_{Lo}$	Lowest Dose to have killed animals or humans
LEL	Lower Explosive Limit
µg/m^3	microgram per cubic meter of air
mg/m^3	milligram per cubic meter of air
mppcf	million particles per cubic foot
MSDS	Material Safety Data Sheet
MSHA	Mine Safety and Health Administration
NFPA	National Fire Protection Association
NIF	No Information Found
NIOSH	National Institute for Occupational Safety and Health
NTP	National Toxicology Program
ORC	Organization Resources Counselors
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
PNOR	Particulate Not Otherwise Regulated
PNOC	Particulate Not Otherwise Classified
PPE	Personal Protective Equipment
ppm	parts per million
RCRA	Resource Conservation and Recovery Act
RTECS	Registry of Toxic Effects of Chemical Substances
SARA	Superfund Amendment and Reauthorization Act
SCBA	Self-contained Breathing Apparatus
STEL	Short-term Exposure Limit
TLV	Threshold Limit Value
TWA	Time-weighted Average
UEL	Upper Explosive Limit

ISCLAIMER: All information, recommendations, and suggestions appearing herein concerning the product are based upon data believed to be reliable.

Section 16 – Other Information (continued)

NOTE: The percent composition in Section 3 reflects the range that is possible within this GROUP of products. These are not the technical specifications for a particular product.

: AM Health and Safety, Inc. (acting consultant)	**REVISION NO.**: 2	**APPROVAL DATE**: 12/15/14
MFR. CONTACT: M.R. Shirey (724-226-5980)	**SUPERSEDES MSDS DATED**: 12-15-11	

Safety Data Sheet

Product Name: Stanadyne Performance Formula®

* * * SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION * * *

PRODUCT NUMBERS: 38564 (8oz./237ml); 38565 (16oz./473ml); 38566 (64oz./1.9L); 38567 (5gal./19L); 38568 (55gal./208L)
CHEMICAL NAME: Mixture
PRODUCT USE: Diesel Fuel Additive
COMPANY INFORMATION:

Clarcor Inc.
840 Crescent Centre Drive, Suite 600
Franklin, TN 37067 U.S.A

Phone: 1-800-842-2496
Emergency # CHEMTREC 1-800-424-9300
CHEMTREC (Outside US & Canada) 1-703-527-3887

* * * SECTION 2 – HAZARDS IDENTIFICATION * * *

A. CLASSIFICATION OF THE SUBSTANCE OR MIXTURE:

Flammable Liquid	Category 4
Acute toxicity, oral	Category 4
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2
Carcinogenicity	Category 2
Aspiration	Category 1
Specific target organ toxicity, singe exposure	Category 3, central nervous system

OSHA defined hazards None

B. LABEL ELEMENTS

1. OSHA



DANGER
Combustible liquid. Harmful if swallowed. Causes skin irritation. Causes serious eye irritation. Suspected of causing cancer. May be fatal if swallowed and enters airways. May cause drowsiness or dizziness.

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from flames and hot surfaces. – No smoking. Wear protective gloves/protective clothing/eye protection/face protection. Wash thoroughly after handling. Do not eat or drink when using this product. Avoid breathing mist/vapor/spray. Use only outdoors or in a well-ventilated area. If swallowed: Call a poison center or doctor if you feel unwell. Rinse mouth. Do NOT induce vomiting. If on skin: Wash with plenty of water. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. If inhaled: remove person to fresh

air and keep comfortable for breathing. If exposed or concerned: Get medical advice. Store in a well-ventilated place. Keep cool. Store locked up. Dispose of contents/container in accordance with local/regional/national regulations.

OTHER HAZARDS:
None identified.

2. CONSUMER PRODUCTS

Front: DANGER: HARMFUL OR FATAL IF SWALLOWED. COMBUSTIBLE. VAPOR HARMFUL. CAUSES EYE AND SKIN IRRITATION. KEEP OUT OF REACH OF CHILDREN. See back panel.

Back: Hazards: Contains petroleum distillates, 2-ethylhexyl nitrate, ethylene glycol monobutyl ether and naphthalene. Harmful or fatal if swallowed. Causes skin and eye irritation. Vapor may cause drowsiness or dizziness. Contains a small amount of naphthalene which is suspected of causing cancer.

Precaution: Keep away from heat or flame. Avoid swallowing, contact with eyes or skin, or breathing vapor. Wash immediately after contact. Use in well-ventilated area.

First Aid: If swallowed, do NOT induce vomiting – Call physician immediately. In case of contact, flush eyes with water and wash skin with soap and water. If eye discomfort persists, contact a physician. If affected by vapor, get fresh air – Call physician if symptoms persist.

* * * SECTION 3 - COMPOSITION / INFORMATION ON INGREDIENTS * * *

CAS #	CHEMICAL NAME	PERCENT (w/w)	INGREDIENT CLASSIFICATION*
64742-47-8	Distillates, petroleum, hydrotreated light	30-50	Flam. Liq. 4 – H227; Skin Irrit. 2 – H315; STOT-SE 3 – H335; Asp. 1 – H304; Aquatic Chron. 2 – H411
27247-96-7	2-Ethylhexyl nitrate	25-35	Acute Tox. 4 – H302, H312 & H332; Aquatic Chron. 2 – H411
64742-94-5	Naphtha (petroleum), heavy aromatic	10-20	Flam. Liq. 4 – H227; Skin Irrit. 2 – H315; STOT 3 – H336 (CNS); Asp. 1 – H304; Aquatic Chron. 2 – H411
104-76-7	2-Ethylhexanol	10-15	Acute Tox. 4 – H332; Skin Irrit. 2 – H315; Eye Irrit. 2 – H319; STOT-SE 3 – H335
111-76-2	Ethylene glycol monobutyl ether	2-4	Acute Tox. 4 – H302, H312 & H332; Skin Irrit. 2 – H315; Eye Irrit. 2 – H319
91-20-3	Naphthalene	2-4	Acute Tox. 4 – H302; Carc. 2 – H351; Aquatic Acute 1 – H400; Aquatic Chron. 1 – H410
95-63-6	1,2,4-Trimethylbenzene	2-4	Flam. Liq. 3 – H226; Acute Tox. 4 – H332; Skin Irrit. 2 – H315; Eye Irrit. 2 – H319; Aspiration Tox. 1 – H304; STOT-SE 3 – H335; Aquatic Chron. 2 – H411
108-67-8	1,3,5-Trimethylbenzene	2-4	Flam. Liq. 3 – H226; Acute Tox. 4 – H332; Skin Irrit. 2 – H315; Eye Irrit. 2 – H319; Aspiration Tox. 1 – H304; STOT-SE 3 – H335; Aquatic Chron. 2 –

			H411
526-73-8	1,2,3-Trimethylebenzene	2-4	Flam. Liq. 3 – H226; Acute Tox. 4 – H332; Skin Irrit. 2 – H315; Eye Irrit. 2 – H319; Aspiration Tox. 1 – H304; STOT-SE 3 – H335; Aquatic Chron. 2 – H411

COMPONENT RELATED REGULATORY INFORMATION

This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication). This product contains glycol ethers. The exact concentrations of one or more of the above listed components are being withheld as a trade secret.

* * * SECTION 4 - FIRST AID MEASURES * * *

DESCRIPTION OF FIRST AID MEASURES:

Eyes

Quickly and gently blot away excess chemical. Immediately flush the contaminated eye(s) with lukewarm, gently flowing water for 15 minutes or until the chemical is removed, while holding the eyelid(s) open. Take care not to rinse contaminated water into the unaffected eye or onto the face. Seek immediate medical attention.

Skin

Remove contaminated clothing. Quickly and gently blot away excess chemical. Wash gently and thoroughly with warm water and non-abrasive soap for 15 minutes or until the chemical is removed. Get medical attention if skin disorder develops.

Ingestion

Never give anything by mouth if victim is rapidly losing consciousness, or is unconscious or convulsing. Have victim rinse mouth thoroughly with water. DO NOT INDUCE VOMITING. Have victim drink 8 to 10 oz. of water to dilute product in stomach. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Repeat administration of water. Seek immediate medical attention or advice.

Inhalation

If affected, remove source of contamination or move individual to fresh air. If the affected person is not breathing, trained personnel should begin artificial respiration immediately. Seek medical attention if symptoms persist. If overcome by vapor from hot product, immediately remove to fresh air and call a physician.

MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED:

Potential Health Effects: Eyes

This product is irritating to the eyes. Effects may include a burning sensation, redness, swelling and/or blurred vision.

Potential Health Effects: Skin

This product is irritating to the skin. Prolonged or repeated contact with this product may dry and/or defat skin. Symptoms may include redness, edema, drying or cracking of skin.

Potential Health Effects: Ingestion

This product is harmful if swallowed and may cause toxic effects. May cause irritation of the mouth, gastrointestinal lining, nausea, vomiting, diarrhea, and abdominal pain. Ingestion of this product may cause headache, dizziness, uncoordination, and general weakness. Small amounts of this product, if aspirated into the lungs, may cause mild to severe pulmonary injury, possibly death.

Potential Health Effects: Inhalation

Inhalation of oil mists or fumes can cause irritation of the mucous membranes and upper respiratory tract. Excessive inhalation of this product causes headache, dizziness, nausea, stupor, and other central nervous system effects leading to visual impairment, difficulty breathing, memory loss, convulsions and uncoordination. Repeated and prolonged overexposure to oil mists may result in droplet deposition, oil granuloma formation, inflammation and increased incidence of infection. Breathing of vapor or mist may aggravate asthma and inflammatory or fibrotic pulmonary disease.

INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED:
Pulmonary aspiration hazard if swallowed; treat symptomatically.

* * * SECTION 5 – FIRE FIGHTING MEASURES * * *

GENERAL FIRE HAZARDS
Fire and explosion hazards are moderate when this product is exposed to heat or flame. Liquid can burn upon heating to temperatures at or above the flash point. Vapors are heavier than air and may travel along the ground to some distant source of ignition and flash back.

EXTINGUISHING MEDIA
Dry chemical, foam, carbon dioxide, water fog. Use water to cool fire-exposed containers and to protect personnel. Direct water spray or foam may cause frothing and spattering. If a leak or spill has not ignited, use water spray to disperse vapors and to flush spills away from exposure.

SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE
Irritating and toxic gases or fumes may be released during a fire. Upon combustion, this product may yield oxides of nitrogen, carbon monoxide, carbon dioxide, and/or other low molecular weight hydrocarbons.

ADVICE FOR FIREFIGHTERS
Firefighters should wear full-face, self-contained breathing apparatus and impervious protective clothing. Firefighters should avoid inhaling any combustion products.

NFPA RATINGS: Health: 2 **Fire:** 2 **Reactivity:** 0 **Other:**
Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

* * * SECTION 6 – ACCIDENTAL RELEASE MEASURES * * *

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES
Eliminate all sources of ignition or flammables that may come into contact with a spill of this product. Surfaces may become slippery after spillage. Wear appropriate protective equipment and clothing during cleanup. Do not allow the spilled product to enter public drainage systems or open watercourses. If product is spilled, notify appropriate authorities at the local, state, federal, and provincial levels. Persons not wearing protective equipment should be excluded from area of spill until cleanup has been completed. Stop the flow of product, if this can be done without risk.

METHODS AND MATERIALS FOR CONTAINMENT AND CLEAN-UP PROCEDURES
Absorb with non-flammable suitable absorbent such as sand or earth. Scoop up used absorbent into drums or other appropriate container.

* * * SECTION 7 - HANDLING AND STORAGE * * *

PRECAUTIONS FOR SAFE HANDLING

Avoid prolonged or repeated skin contact with this product. Avoid getting this product into contact with your eyes. Avoid the generation of mists. Wash thoroughly after handling. Use this product with adequate ventilation. Discard any shoes or clothing items that cannot be decontaminated.

CONDITIONS FOR SAFE STORAGE (including any incompatibilities)

Do not store near heat, sparks, open flame or strong oxidizing agents. Do not store this product in open or unlabeled containers. Store drums in a covered area with secondary containment. "Empty" containers retain product residue (liquid and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition; they may explode. Follow appropriate grounding procedures.

* * * SECTION 8 – EXPOSURE CONTROLS / PERSONAL PROTECTION * * *

EXPOSURE GUIDELINES

A: General Product Information

Follow all applicable exposure limits. Under conditions which may generate mists, the component supplier recommends the OSHA PEL of 5 mg/m3 and the ACGIH STEL of 10 mg/m3 for oil mists. Included below are the OSHA Vacated permissible exposure limits (PELs).

B: Component Exposure Limits

Compound	ACGIH		NIOSH		OSHA		Other
	TWA	STEL	TWA	STEL	TWA	STEL	TWA
Petroleum distillates	N/E	N/E	350 mg/m^3 (C)	1800 mg/m^3	500 ppm 2000 mg/m^3	N/E	N/E
Ethylene glycol monobutyl ether	25 ppm (S)	N/E	5 ppm (S)	N/E	50 ppm (S)	N/E	IDLH = 700 ppm
1,2,4-Trimethylbenzene	N/E	N/E	25 ppm	N/E	N/E	N/E	N/E
1,3,5-Trimethylbenzene	N/E	N/E	25 ppm	N/E	N/E	N/E	N/E
Naphthalene	10 ppm	15 ppm	10 ppm	15 ppm	10 ppm	N/E	N/E

(S) - skin exposure
(C) - ceiling exposure
N/E - none established

ENGINEERING CONTROLS

Use general ventilation and use local exhaust, where possible, in confined or enclosed spaces.

PERSONAL PROTECTIVE EQUIPMENT

Eyes/Face

Wear safety glasses. Wear chemical goggles or face shield if mist is likely to occur.

Skin

Use impervious gloves. Wear oil-impervious garments if contact is unavoidable.

Respiratory

In the event of excessive exposure to vapors/mists/fumes, use NIOSH/OSHA approved respiratory equipment. Respirator should be selected on the basis of form and concentration of contaminant.

General

Use good hygiene when handling petroleum product. Launder contaminated clothing before reuse. Excessive misting may cause slippery floors - wear appropriate footwear. Eye wash fountains are recommended.

* * * SECTION 9 – PHYSICAL & CHEMICAL PROPERTIES * * *

Appearance:	Amber colored	**Odor:**	Oil / solvent
Physical State:	Liquid	**Odor threshold:**	Not applicable
pH:	Not applicable	**Melting/freezing point:**	Not determined
Initial boiling point & range:	Not determined	**Flash point:**	142 °F (61.1°C)
Upper/lower flammability or explosive limits:	Not determined	**Flammability (solid, gas):**	Not applicable
Auto-ignition temperature:	Not determined	**Decomposition temperature:**	Not determined
Vapor density:	Not determined	**Vapor pressure:**	Not determined
Solubilities:	Negligible	**Partition Coefficient:**	Not determined
Evaporation rate:	Not determined	**Viscosity:**	Not determined
Relative density:	0.924	**Density:**	Not determined

* * * SECTION 10 - CHEMICAL STABILITY & REACTIVITY INFORMATION * * *

REACTIVITY

Not reactive

CHEMICAL STABILITY

Stable

POSSIBILITY OF HAZARDOUS REACTIONS

Hazardous polymerization will not occur.

CONDITIONS TO AVOID:

Heat, ignition sources and sparks.

INCOMPATIBILITY

This product may react with strong oxidizing agents.

HAZARDOUS DECOMPOSITION

Decomposition of this product may yield oxides of nitrogen, carbon monoxide, carbon dioxide and/or low molecular weight hydrocarbons.

* * * SECTION 11 - TOXICOLOGICAL INFORMATION * * *

DESCRIPTION OF THE VARIOUS TOXICOLOGICAL EFFECTS

Likely Routes of Exposure

Inhalation

Symptoms Related to the Physical, Chemical and Toxicological Characteristics (including immediate and delayed effects and chronic effects for short- and long-term exposure)

This product is irritating to the eyes and skin. Excessive inhalation of this product can cause headache, dizziness and uncoordination. This product may cause nervous system effects including peripheral neuropathy. This product contains a chemical(s) which have been shown to cause cancer in laboratory animals. A component present at low concentrations in this product has been reported to cause birth defects and/or other reproductive harm. Components of this product may have adverse effects on the blood-forming system. Irritating and toxic vapors may be released upon combustion of product.

Potential Health Effects: Eyes

This product is irritating to the eyes. Effects may include a burning sensation, redness, swelling and/or blurred vision.

Potential Health Effects: Skin

This product is irritating to the skin. Prolonged or repeated contact with this product may dry and/or defat skin. Symptoms may include redness, edema, drying or cracking of skin.

Potential Health Effects: Ingestion

This product is harmful if swallowed and may cause toxic effects. May cause irritation of the mouth, gastrointestinal lining, nausea, vomiting, diarrhea, and abdominal pain. Ingestion of this product may cause headache, dizziness, uncoordination, and general weakness. Small amounts of this product, if aspirated into the lungs, may cause mild to severe pulmonary injury, possibly death. Ingestion of this product may cause read blood cell hemolysis and possible liver and kidney injury.

Potential Health Effects: Inhalation

Inhalation of oil mists or fumes can cause irritation of the mucous membranes and upper respiratory tract. Excessive inhalation of this product causes headache, dizziness, nausea, stupor, and other central nervous system effects leading to visual impairment, difficulty breathing, memory loss, convulsions and incoordination. Overexposure to organic nitrates by inhalation may cause headache, nausea and decreased blood pressure. Repeated and prolonged overexposure to oil mists may result in droplet deposition, oil granuloma formation, inflammation and increased incidence of infection. Breathing of vapor or mist may aggravate asthma and inflammatory or fibrotic pulmonary disease. Repeated exposure to naphthalene may cause destruction of red blood cells with anemia, fever, jaundice and kidney and liver damage.

Data and/or Acute Toxicity Estimates

No data available on product as a whole.

CAS #	Component	Percent	LD50 – Oral (rat)	LD50 – Dermal (rabbit)	LC50 – Inhalation (rat)
111-76-2	Ethylene glycol monobutyl ether	2-4	470 mg/ kg	220 mg/kg	450 ppm (4H)
91-20-3	Naphthalene	2-4	490 mg/kg	> 20 g/kg	> 340 mg/m3 (1H)
95-63-6	1,2,4-Trimethylbenzene	2-4	5 g/kg	Not available	18 g/m3 (4H)
108-67-8	1,3,5-Trimethylbenzene	2-4	Not available	Not available	24 g/m3 (4H)

One or more components have produced damage after prolonged exposure in laboratory animals to one or more of the following: kidneys, liver, spleen, blood and/or circulatory system. Naphthalene has been shown to cause cancer in

laboratory animals and is classified Group 2B by IARC. Ethylene glycol monobutyl ether has been classified Group 3 by IARC. Ethylene glycol monobutyl ether has been linked with or reported to cause either birth defects and/or other reproductive harm.

Category	Classification Based on Available Data
Acute toxicity:	Harmful if swallowed.
Skin/eye irritation:	Skin irritation 2 (component additivity); Eye irritation 2 (component additivity)
Corrosivity:	Conclusive but not sufficient for classification
Respiratory or skin sensitization:	Conclusive but not sufficient for classification
Germ cell mutagenicity:	Data lacking
Carcinogenicity:	Contains naphthalene which suspected of causing cancer based on animal studies.
Reproductive toxicity:	Data lacking
STOT-SE:	STOT 3 (CNS effects)
STOT-RE:	Data lacking
Aspiration hazard:	Asp. 1

* * * SECTION 12 - ECOLOGICAL INFORMATION * * *

No ecotoxicity or environmental fate data available on product as a whole.

A summary of aquatic toxicity data for components of this product is available upon request.

* * * SECTION 13 - DISPOSAL CONSIDERATIONS * * *

US EPA WASTE NUMBER & DESCRIPTIONS

User must test waste using methods described in 40 CFR Part 261 to determine if it meets applicable definitions of hazardous waste. If disposed of as shipped, this product may be considered a D001 ignitable waste.

DISPOSAL INSTRUCTIONS

Dispose of waste product according to local, state, federal, and provincial environmental regulations. Do not allow this product to drain into sewers/water supplies. Product should be recycled if possible.

* * * SECTION 14 - TRANSPORTATION INFORMATION * * *

General Transportation Information

NOTE: Information in this section (Section 14) is presented as a guide only. Requirements may vary depending upon package size and exceptions used, if any. Follow current, applicable requirements under DOT, TDG, IMO/IMDG, and ICAO/IATA to ensure regulatory compliance.

U.S. Department of Transportation Regulations Ground Transportation

Non-bulk. Not regulated based on Combustible Liquid exception [49CFR 173.150(f)]. Review and follow all requirements pertaining to this exception. See also 49 CFR 171.4(c). Naphthalene: RQ 100 lbs.

Canadian TDG Regulations Ground Transportation

Non-bulk. Not regulated based on exception, Canada TDG, Part I, Section 1.33. Review and follow all requirements pertaining to this exception.

ICAO/IATA

UN 3082, Environmentally Hazardous Substance, Liquid, N.O.S. (2-ethyhexyl nitrate; naphthas), 9, PG III

IMO/IMDG

UN 3082, Environmentally Hazardous Substance, Liquid, N.O.S. (2-ethyhexyl nitrate; naphthas) 9, PG III, (61.1°C c.c.), Marine Pollutant

EmS: F-A, S-F

* * * SECTION 15 - REGULATORY INFORMATION * * *

US Federal Regulations

A: General Product Information

Components listed in Section 3 of the SDS are present on the TSCA Inventory.

This product is a registered fuel additive (40 CFR 79) – Registration #1255-0001.

B: Component Analysis

1. This product contains the following chemicals required to be identified under SARA Section 313 (40 CFR 372.65).
   Ethylene glycol monobutyl ether (111-76-2) (glycol ether category)
   Naphthalene (91-20-3)
   1,2,4-Trimethylbenzene (95-63-6)
2. This product contains ingredients which are known to the State of California to cause cancer, or birth defects or other reproductive harm.

C. Component Marine Pollutants

This product contains 2-ethylhexyl nitrate and petroleum naphthas which are required by US DOT and/or IMO/IMDG to be identified as a marine pollutants.

Other Regulations

Components listed in Section 3 of the SDS are present on the DSL and EINECS Inventories. This product has been classified in accordance with the hazard criteria required by the Canadian *Hazardous Product Act* and the SDS contains all the information required by the Canadian *Hazardous Products Regulations.*

WHMIS Classification: Flam. Liq. 4 – H227; Acute Tox. 4 – H302; Skin Irrit. 2 – H315; Eye Irrit. 2 – H319; Carc. 2 – H351; STOT-SE 3 – H335 & H336; Asp. 1 – H304.

* * * SECTION 16 - OTHER INFORMATION * * *

OTHER INFORMATION

HAZARD STATEMENTS FROM SECTION 3

H226 – Flammable liquid and vapor.
H227 – Combustible.
H302 – Harmful if swallowed.
H304 – May be fatal if swallowed and enters airways.
H312 – Harmful in contact with skin.
H315 – Causes skin irritation.
H319 – Causes serious eye irritation.

H332 – Harmful if inhaled.
H335 – May cause respiratory irritation.
H336 – May cause drowsiness or dizziness.
H351 – Suspected of causing cancer.
H400 – Very toxic to aquatic life.
H410 – Very toxic to aquatic life with long lasting effects.
H411 – Toxic to aquatic life with long lasting effects.

HMIS Ratings: Health: 2* **Fire:** 2 **Reactivity:** 0 **Pers. Prot.:** impervious gloves/safety glasses (chemical goggles if splashing is possible)
Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe * = Chronic hazard

Other Information

The information and recommendations presented in this Safety Data Sheet are based on sources believed to be reliable on the date hereof. Clarcor Inc. makes no representation on its completeness or accuracy. This product is sold "as is" and it is the user's responsibility to determine the product's suitability for its intended use, the product's safe use, and the product's proper disposal. The statements and descriptions provided are informational only and no representations or warranties, either expressed or implied, of merchantability or fitness for a particular purpose or of any other nature are made with respect to the information provided in this Safety Data Sheet or to the product to which such information refers. Clarcor Inc. neither assumes nor authorizes any other person to assume for it, any other or additional liability or responsibility resulting from the use of, or reliance upon, this information. Clarcor Inc. assumes no responsibility for injury to recipient or to third persons or for any damage to any property and recipient assumes all such risks.

Key/Legend

N = No; Y = Yes; ppm - parts per million; mg/m3 = milligrams per cubic meter of air; ACGIH = American Conference of Governmental Industrial Hygienists; OSHA = Occupational Safety and Health Administration; TLV = Threshold Limit Value; NIOSH = National Institute of Occupational Safety and Health; IDLH = Immediately Dangerous to Life or Health Concentrations; NTP = National Toxicology Program; IARC = International Agency for Research on Cancer; TSCA = Toxic Substance Control Act; DSL = Dangerous Substances List; EINECS = European Inventory of New and Existing Chemical Substances

Contact: For further information call 1-800-842-2496

This is the end of the SDS

SAFETY DATA SHEET
PROSOCO, Inc.

Issue Date 16-Jan-2015 **Revision Date** 16-Jan-2015 **Version** 1

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier
Product Name Stand Off® Gloss N Guard WB

Other means of identification
Product Code 55086

Recommended use of the chemical and restrictions on use
Recommended Use Restricted to professional users.
Uses advised against No information available

Details of the supplier of the safety data sheet
Manufacturer Address
PROSOCO, Inc.
3741 Greenway Circle
Lawrence, Kansas 66046

Emergency telephone number
8:00 AM – 5:00 PM CST Monday-Friday 785-865-4200
NON-BUSINESS HOURS (INFOTRAC) 800-535-5053

2. HAZARDS IDENTIFICATION

Classification

Not a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Label elements

Emergency Overview

The product contains no substances which at their given concentration, are considered to be hazardous to health

Appearance opaque **Physical state** Liquid **Odor** Mild

Hazards not otherwise classified (HNOC)
Other Information
• May be harmful in contact with skin
3.38074% of the mixture consists of ingredient(s) of unknown toxicity

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%	Trade Secret
Water	7732-18-5	15 - 40	*
2,2,4-trimethyl-1,3-pentaediol monoisobutyrate	25265-77-4	1 - 5	*
Dipropylene glycol n butylether	29911-28-2	1 - 5	*
Propylene glycol phenyl ether	770-35-4	1 - 5	*

* The exact percentage (concentration) of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

First aid measures

General advice If symptoms persist, call a physician. Do not get in eyes, on skin, or on clothing.

Eye contact Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Keep eye wide open while rinsing. If symptoms persist, call a physician.

Skin Contact Wash off immediately with plenty of water while removing contaminated clothing and shoes. Consult a physician if necessary.

Inhalation Remove to fresh air. If breathing is irregular or stopped, administer artificial respiration. Call a physician.

Ingestion Do NOT induce vomiting. Rinse mouth. Drink plenty of water. If symptoms persist, call a physician.

Self-protection of the first aider Use personal protective equipment as required.

Most important symptoms and effects, both acute and delayed

Symptoms May be harmful in contact with skin.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media Caution: Use of water spray when fighting fire may be inefficient.

Specific hazards arising from the chemical
No information available.

Protective equipment and precautions for firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Avoid contact with eyes and skin.

Environmental precautions

Environmental precautions Prevent entry into waterways, sewers, basements or confined areas. Do not flush into surface water or sanitary sewer system. See Section 12 for additional ecological information.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up Use personal protective equipment as required. Dam up. Cover liquid spill with sand, earth or other non-combustible absorbent material. Pick up and transfer to properly labeled containers. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. Wash contaminated clothing before reuse. Do not breathe dust/fume/gas/mist/vapors/spray. Do not eat, drink or smoke when using this product.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep container tightly closed in a dry and well-ventilated place. Keep out of the reach of children.

Incompatible materials Acids. Bases. Strong oxidizing agents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

NIOSH IDLH Immediately Dangerous to Life or Health

Other Information Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

Appropriate engineering controls

Engineering Controls None under normal use conditions.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles).

Skin and body protection Wear protective gloves and protective clothing.

Respiratory protection If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

General Hygiene Considerations Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Liquid		
Appearance	opaque	**Odor**	Mild
Color	white	**Odor threshold**	No information available

Property	**Values**	**Remarks • Method**
pH	8	
Melting point/freezing point	0 °C / 32 °F	
Boiling point/boiling range	No information available	
Flash point	> 100 °C / > 212 °F	
Evaporation rate	No information available	
Flammability (solid, gas)	No information available	
Flammability Limits in Air		
Upper flammability limits	No information available	
Lower flammability limit	No information available	
Vapor pressure	No information available	
Vapor density	No information available	
Specific Gravity	1.02	
Water solubility	Miscible in water	
Solubility in other solvents	No information available	
Partition coefficient	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity	No information available	
Dynamic viscosity	No information available	

10. STABILITY AND REACTIVITY

Reactivity
No data available

Chemical stability
Stable under recommended storage conditions.

Possibility of Hazardous Reactions
None under normal processing.

Conditions to avoid
Extremes of temperature and direct sunlight.

Incompatible materials
Acids. Bases. Strong oxidizing agents.

Hazardous Decomposition Products
Hazardous combustion products.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information May cause irritation May be harmful in contact with skin

Inhalation Avoid breathing vapors or mists.

Eye contact Avoid contact with eyes.

Skin Contact Avoid contact with skin. May be harmful in contact with skin.

Ingestion Do not taste or swallow. May be harmful if swallowed.

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Water 7732-18-5	> 90 mL/kg (Rat)	-	-
2,2,4-trimethyl-1,3-pentaediol monoisobutyrate 25265-77-4	= 3200 mg/kg (Rat)	> 15200 mg/kg (Rat)	-
Dipropylene glycol n butylether 29911-28-2	= 1620 µL/kg (Rat)	= 5860 µL/kg (Rabbit)	> 2.04 mg/L (Rat) 4 h = 42.1 ppm (Rat) 4 h
Propylene glycol phenyl ether 770-35-4	= 2830 mg/kg (Rat)	> 2 g/kg (Rabbit)	-

Information on toxicological effects

Symptoms May be harmful by inhalation, ingestion, or skin absorption.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization No information available.
Germ cell mutagenicity No information available.
Carcinogenicity No information available.
Reproductive toxicity No information available.
STOT - single exposure No information available.
STOT - repeated exposure No information available.
Aspiration hazard No information available.

Numerical measures of toxicity - Product Information

Unknown Acute Toxicity 3.38074% of the mixture consists of ingredient(s) of unknown toxicity
The following values are calculated based on chapter 3.1 of the GHS document .
ATEmix (oral) 10575 mg/kg
ATEmix (dermal) 3498 mg/kg mg/l

12. ECOLOGICAL INFORMATION

Ecotoxicity

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
2,2,4-trimethyl-1,3-pentaediol monoisobutyrate 25265-77-4	18.4: 72 h Pseudokirchneriella subcapitata mg/L EC50	30: 96 h Pimephales promelas mg/L LC50	-	95: 96 h Daphnia magna mg/L LC50
Dipropylene glycol n butylether 29911-28-2	-	841: 96 h Poecilia reticulata mg/L LC50 static	-	-

Persistence and degradability
No information available.

Bioaccumulation
No information available.

Chemical Name	Partition coefficient
2,2,4-trimethyl-1,3-pentaediol monoisobutyrate 25265-77-4	3.47

Other adverse effects No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal of wastes Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated packaging Do not reuse container.

This product contains one or more substances that are listed with the State of California as a hazardous waste.

14. TRANSPORT INFORMATION

DOT Not regulated

15. REGULATORY INFORMATION

International Inventories

TSCA	Complies
DSL/NDSL	Complies

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories

Acute health hazard	Yes
Chronic Health Hazard	No
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act)
This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

CERCLA
This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

US State Regulations

California Proposition 65
This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations

16. OTHER INFORMATION

NFPA	**Health hazards** 1	**Flammability** 0	**Instability** 0	**Physical and Chemical Properties** -
HMIS	**Health hazards** 1	**Flammability** 0	**Physical hazards** 0	**Personal protection** X

Prepared By Regulatory Department
Issue Date 16-Jan-2015
Revision Date 16-Jan-2015
Revision Note
No information available

Disclaimer
The information contained on the Material Safety Data Sheet has been compiled from data considered accurate. This data is believed to be reliable, but it must be pointed out that values for certain properties are known to vary from source to source. PROSOCO, Inc. expressly disclaims any warranty express or implied as well as any liability for any injury or loss arising from the use of this information or the materials described. This data is not to be construed as absolutely complete since additional data may be desirable when particular conditions or circumstances exist. It is the responsibility of the user to determine the best precautions necessary for the safe handling and use of this product for his unique application. This data relates only to the specific material designated and is not to be used in combination with any other material. Many federal and state regulations pertain directly or indirectly to the product's end use and disposal of containers and unused material. It is the purchaser's responsibility to familiarize himself with all applicable regulations.

End of Safety Data Sheet

Material Safety Data Sheet

Steel Wire Rod, Rebar, Wire Mesh

Section I

Manufacturer's Name: Connecticut Steel Corporation
35 Toelles Road, P. O. Box 928
Wallingford, CT 06492

Emergency Telephone #: 203-265-0615
Telephone # for Information: 203-265-0615

Date Prepared: October 2002 **Date Reviewed**: July 2012

Section II - Hazardous Ingredients/Identity Information (All %'s listed as maximums.)

Hazardous Components (Specific Chemical Identity; Common Name(s)	Other OSHA PEL	ACGIH TLV	Limits Recommended	% (Optional)
Iron, Fe, FeO	10mg/m^3	5mg/m^3	as dust/fume	99 (max)
Manganese, Mn	5mg/m^3	0.2mg/m^3	as Mn	1.7
Carbon, C	-	-		0.90
Chromium, Cr	1mg/m^3	0.5mg/m^3	as metal	0.35
Nickel, Ni	1mg/m^3	1.5mg/m^3	as metal	0.35
Copper, Cu	1mg/m^3	1mg/m^3	as dust	0.5
Silicon, Si	15mg/m^3	10mg/m^3	as dust	0.75
Molybdenum, Mo	15mg/m^3	10mg/m^3	as inscl.	0.20
Lead, PB	0.05mg/m^3	0.05mg/m^3	as dust	<0.01
Zinc, Zn	10mg/m^3	10mg/m^3	as dust	0.01
Cadmium, Cd	0.005mg/m^3	0.01mg/m^3	as Cd	<0.1
Cobalt, Co	0.1mg/m^3	0002mg/m^3	as Co	<0.1

Section III - Physical/Chemical Characteristics

Boiling Point	5430 F	Specific Gravity (H_20 – 1)	N/A
Vapor Pressure (mm Hg.)	N/A	Melting Point 2800	F
Vapor Density (AIR – 1) N/A		Evaporatio n Rate (Butyl Acetate-1)	N/A
Solubility in Water	N/A		

Appearance and Odor: Odorless metallic solids, available as wire rod, rebar or welded wire mesh.

Section IV - Fire and Explosion Hazard Data

Flash Point (Method used):	N/A
Flammable Limits:	N/A
Extinguishing Media:	For molten metal, use dry powder or sand
Special Fire Fighting Procedures:	Do not use water on molten metal

Unusual Fire and Explosion Hazards: Steel products do not present fire or explosion hazards under normal conditions. Metal particles can burn. High concentrations of metal fines in air may have an explosion hazard.

Section V - Reactivity Data

Stability: Unstable ___ Stable __X__

Conditions to Avoid: Steel at temperatures above the melting point may liberate fumes containing oxides of iron and other metallic elements. Avoid generating fumes.

Incompatibility (Materials to Avoid): Strong Acids

Hazardous Decomposition or Byproducts: Metal fumes may be produced during welding, burning, grinding and machining.

Hazardous Polymerization: May occur ____ Will not occur __X__

Section VI - Health Hazard Data

Route(s) of Entry: Inhalation? n/a Skin? n/a Ingestion? n/a (see below)

Health Hazards (Acute and Chronic): Steel products in their solid state do not produce inhalation, skin or ingestion hazards. However, welding, cutting, brazing, grinding and machining may cause dust or fumes to be released which could be harmful if inhaled.

Carcinogenicity: NTP? n/a IARC Monographs? n/a OSHA Regulated? n/a

Signs and Symptoms of Exposure: Dust or particles may cause pain, tearing and redness of eyes, burning, itching of skin, irritation of nose, throat and lungs.

Medical Conditions (generally aggravated by exposure): Diseases of skin may be aggravated by exposure. Also disorders of the respiratory system may be aggravated.

Emergency First Aid Procedures: In case of overexposure to dust or fumes, flush eyes with water for 15 minutes. Wash skin with soap and water. Remove to fresh air.

Section VII - Precautions for Safe Handling and Use

Steps to be taken in case material is released or spilled: Avoid inhalation, eye or skin contact with dust. Keep fine dust from ignition sources.

Waste Disposal Method: Dispose of used or unused product in accordance with applicable federal, state and local regulations.

Precautions to be taken in handling and storing: Store away from strong oxidizers. Dust and powders may form explosive mixtures with air. Avoid breathing dust or fumes.

Other precautions: Store under normal temperature and pressure.

Section VIII - Control Measures

Respiratory Protection (Specify Type): Use dust/fume/mist respirator when excessive exposure to dust or fume.
Ventilation: Local Exhaust – use to control airborne dust
Protective Gloves: Use appropriate gloves when handling steel.
Eye Protection: Use safety glasses or goggles.
Other Protective Clothing or Equipment: Use face shield when cutting or welding steel.
Work/Hygienic Practices: Good personal hygiene practices should be followed, including cleaning exposed skin with soap and water.

Safety Data Sheet

Conforms to HCS 2012 (29 CFR 1910.1200)

Section 1. Identification

Product identifier

Product Name: **STIHL HP (High Performance) 2-Cycle Engine Oil**

Other names: F3E

Part/Product Number(s): 0781-319-8008, 0781-319-8009, 0781-319-8010, **0781-319-8014**, **0781-319-8015**, **0781-319-8016**, **0781-319-8044**, **0781-319-8045**, **0781-319-8049**, 0781-319-8051, **7010-871-0208**, **7010-871-0177**

Material Use: 2-cycle engine fuel additive

Uses advised against: Not for use in non-2-cycle engines

Manufacturer:
Omni Specialty Packaging, LLC
10399 Hwy 1 South
Shreveport, LA 71115
1-318-524-1100

Issuing date: May 21, 2015

Revision date: February 28, 2018

Revision number: 003

Company contact: OMNI EHS Department: E-Mail: sds@osp.cc; Contact phone: 318-524-1100
(Monday-Friday, 8:00 AM – 4:00 PM, CST)

In case of emergency:
CHEMTREC: Within USA and Canada: 1 (800) 424-9300 (24/7)
CHEMTREC: Outside USA and Canada: +1 703-527-3887 (24/7)

Section 2. Hazards Identification

OSHA/HCS Status: This product is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the Substance or Mixture: Not classified

GHS Label Elements

Hazard pictograms:

Signal word: None

Hazard statement: None

Precautionary statements

General: Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand.

Prevention: Not applicable

Response: Not applicable

Storage: Not applicable

Disposal: Not applicable

Hazards not otherwise classified (HNOC): Defatting to the skin.

Other information: Product diluted with gasoline must be handled with the same precautions used for gasoline. Before mixing, the Safety Data Sheet for gasoline should be consulted for any precautionary measures necessary.

Section 3. Composition/Information on Ingredients

Petroleum mineral oil lubricant base stock with proprietary performance additives mixture.

Substance/Mixture: Mixture

Components Name	CAS number	Weight %*
Lubricant Base Oil (Petroleum) Highly refined mineral oils (C15-C50)	Various	85 – 95
2-Cycle Engine Oil Additives Mixture	Proprietary	5 – 15

This product does not contain known hazardous materials at the ≥ 1% level or known carcinogens at the ≥ 0.1% level as defined by 29 CFR 1910.1200.

* The exact percentage of composition has been withheld as a trade secret.

Section 4. First Aid Measures

Description of necessary first aid measures

General Advice: No specific first aid measures are required. Get medical attention if irritation develops and persists.

Eye contact: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Check for and remove any contact lenses. Get medical attention if irritation develops and persists.

Skin contact: Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention if irritation or allergic reaction develops and persists.

Inhalation: In case of inhalation of decomposition products in a fire, symptoms may be delayed. If inhaled, remove to fresh air. The exposed person may need to be kept under medical surveillance for 48 hours. Get medical attention if symptoms occur.

Ingestion: Do NOT induce vomiting. Drink plenty of water. If symptoms persist, call a physician.

Protection of first-aiders: No action shall be taken involving any personal risk or without suitable training. Remove all sources of ignition. Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Wear personal protective clothing (see section 8).

Most important symptoms and effects, both acute and delayed

See Section 11 for more detailed information on health effects and symptoms.

Most Important Symptoms and Effects: Personnel with pre-existing skin disorders should avoid contact with this product. Under normal use conditions, no adverse effects to health are known.

Eye contact: Not expected to cause prolonged or significant eye irritation.

Skin contact: Contact with skin is not expected to cause prolonged or significant irritation. Contact with skin is not expected to cause an allergic skin response. Not expected to be harmful to internal organs if absorbed through the skin.

Inhalation: Not expected to be harmful if inhaled. Contains petroleum-based mineral oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficult breathing.

Ingestion: Not expected to be harmful if swallowed.

Note to physician: Treat symptomatically.

Section 5. Fire-Fighting Measures

Uniform Fire Code: Class IIIB

Flash Point: 222°C (432°F)

Extinguishing Media

Suitable Media: In case of fire, use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Use water fog, alcohol resistant foam, dry chemical, carbon dioxide (CO2) extinguisher or spray.

Unsuitable Media: CAUTION: Use of water spray when fighting fire may be inefficient.

Specific Hazards Arising from the Chemical: Keep product and empty container away from heat and sources of ignition as product will burn. Contact with strong oxidizers may cause fire. In the event of fire, cool tanks with water spray. Fire residues and contaminated fire extinguishing water must be contained, prevented from being discharged to any waterway, sewer or drain and disposed of in accordance with local regulations.

Hazardous Combustion Products: Combustion products may include the following: Carbon dioxide (CO2) Carbon monoxide (CO), and Nitrogen oxides.

Protection of Fire Fighters: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

Section 6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Do not touch or walk through spilled material. Put on appropriate personal protective equipment. Floors may be slippery; use care to avoid falling.

For emergency responders: If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Pay attention to flashback. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. See also the information in "For non-emergency personnel".

Environmental precautions: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). See Section 12 for ecological information.

Methods and materials for containment and cleaning up

Small Spills: Stop leak if without risk. Move containers from spill area. Absorb with an inert material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large Spills: Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Contain and collect spillage with non- combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Dispose of via a licensed waste disposal contractor.

NOTE: If RQ (Reportable Quantity) is exceeded or if spills enter a body of water, report immediately to the USEPA's National Response Center at (800) 424-8802. Check with your local and state regulators regarding their reporting requirements.

Section 7. Handling and Storage

Precautions for safe handling

Protective measures: Eye protection and face shield should be used if material is used under conditions that increase the chances of splattering. Put on appropriate personal protective equipment (see Section 8). Keep out of reach of children.

NOTE: Product diluted with gasoline must be handled with the same precautions used for gasoline. Before mixing, the Safety Data Sheet for gasoline should be consulted for any precautionary measures necessary.

Advice on general occupational hygiene: Do not get in eyes, on skin or on clothing. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Wash thoroughly after handling. Remove contaminated clothing and protective equipment before entering eating areas.
See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, Including any incompatibilities: Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials, strong oxidizing agents (see Section 10) and food and drink. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Use appropriate containment to avoid environmental contamination. Avoid contaminating soil or releases into sewage or drainage systems and bodies of water.

Section 8. Exposure Controls/Personal Protection

Control parameters

Occupational Exposure Limits

Chemical name	ACGIH		OSHA		NIOSH	
	TLV	STEL	PEL	STEL	TWA	Ceiling
Lubricant Base Oil (Petroleum) Highly refined mineral oils (C15-C50)	5 mg/m3 (mist)	10 mg/m3 (mist)	5 mg/m3 (mist)	–	–	–

Appropriate engineering controls: Good general ventilation should be sufficient to control worker exposure to airborne contaminants. Emergency shower and eyewash station.

Environmental exposure controls: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/Face Protection: Wear safety glasses with side shields. A face shield may be necessary under some conditions.

Skin and Body Protection

Hand protection: Wear protective gloves if prolonged or repeated contact is likely. Wear chemical resistant gloves. Recommended: Nitrile gloves. Consult your supervisor or Standard Operating Procedure (SOP) for special handling instructions.

Body protection: No protective equipment is needed under normal use conditions. For non-routine tasks, personal protection equipment for the body should be selected based on the task being performed and the risks involved.

Other skin protection: Appropriate footwear and any additional skin protection measures should be

selected based on the task being performed and the risks involved.

Respiratory protection: No respiratory protection is normally required. If user operation generates an oil mist, determine if airborne concentrations are below the occupational exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection from measured concentrations of this material. The correct choice of respiratory protection depends upon the chemicals being handled, the conditions of work and use, and the condition of the respiratory equipment. For air-purifying respirators use a particulate cartridge. Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

Section 9. Physical and Chemical Properties

Appearance	**(Typical or Target)**
Physical State:	Liquid
Color:	Blue
Odor:	Petroleum distillates
Odor threshold:	Not available
pH:	Not applicable
Boiling Point:	Not available
Flash Point (Closed cup):	222°C (432°F) (Typical or Target)
Pour Point:	-25°C (-13°F) (Typical or Target)
Evaporation rate (Butyl acetate = 1):	Not available
Flammability (solid, gas):	Not applicable. Based on - Physical state
Flammable) Limit in Air	Not available
Vapor pressure:	Not available
Vapor density (Air = 1):	>1
Relative density:	0.8820 - 0.8990 g/l at 15°C (Typical or Target)
Solubility:	In soluble in water
Partition coefficient (n-Octanol/water):	Not available
Auto-ignition temperature:	Not available
Decomposition temperature:	Not available
Viscosity – Kinematic (cSt (mm2/s)@ 40°C):	85 to 100
Viscosity – Kinematic (cSt (mm2/s) @ 100°C):	10.3 to 12
VOC %:	<0.026%

Section 10. Stability and Reactivity

Reactivity:	Not reactive under normal storage conditions
Chemical stability:	Stable under normal storage conditions
Possibility of hazardous reactions:	None under normal processing.
Hazardous polymerization:	Hazardous polymerization does not occur.
Conditions to avoid:	Heat, flames and sparks.
Incompatible materials:	Oxidizing agents, Halogens, Halogenated compounds
Hazardous decomposition products:	May include: Fumes, Oil vapors, Smoke, Carbon Oxides (including carbon monoxide and carbon dioxide), Aldehydes, Nitrogen oxides, and incomplete combustion products.

Section 11. Toxicological Information

Information on toxicological effects

Basis for Assessment: Information given is based on product data, a knowledge of the components and the toxicity of similar products.

Likely Routs of Exposure: Exposure may occur via skin absorption, skin or eye contact, inhalation, ingestion.

Substance/Mixture

Acute Toxicity	Oral LD50	Dermal LD50	Inhalation LC50
Lubricant Base Oil (Petroleum) Highly refined mineral oils (C15-C50) Mixture - Typical	>2000 mg/Kg (rat)	>2000 mg/Kg (rabbit)	>2.18 mg/L (rat) 4h (mist)

Aspiration hazard:	Not expected to be an aspiration hazard.
Skin Corrosion/Irritation:	No known significant effects or critical hazards.
Serious Eye Damage/Irritation:	No known significant effects or critical hazards.
Skin Sensitization:	No known significant effects or critical hazards.
Respiratory Sensitization:	No known significant effects or critical hazards.
Specific Target Organ Toxicity (Single Exposure) - STOT-SE:	No known significant effects or critical hazards.
Specific Target Organ Toxicity (Repeated Exposure) – STOT-RE:	No known significant effects or critical hazards.
Carcinogenicity:	No known significant effects or critical hazards.
Germ Cell Mutagenicity:	No known significant effects or critical hazards.
Reproductive Toxicity:	No known significant effects or critical hazards.

Information on Toxicity Effects of Compounds

Lubricant Base Mineral Oil (Petroleum)

Mineral oils are known to cause cancer because of carcinogenic components (e.g. Benzene). The lubricant base mineral oils in this product have been highly refined by a variety of processes including severe solvent extraction, severe hydro cracking or severe hydro treating to reduce aromatics and improve performance characteristics. The oils in this product meet the IP-346 criteria of less than 3 percent PHA's and are not considered to be a carcinogen by the International Agency for Research on Cancer.

None of the oils in this product require a cancer warning under the OSHA Hazard Communication Standard (29 CFR 1910.1200). These oils have not been listed in the National Toxicology Program (NTP) Annual Report nor have they been classified by the International Agency for Research on Cancer (IRAC) as: carcinogenic to humans (Group 1), probably carcinogenic to humans (Group 2A), or possibly carcinogenic to humans (Group 2B). These oils have not been classified by the American Conference of Governmental Industrial Hygienists (ACGIH) as: confirmed human carcinogen (A1), suspected human carcinogen (A2), or confirmed animal carcinogen with unknown relevance to humans (A3).

2-Cycle engine oils mix with gasoline:

2-cycle engine oils diluted with gasoline must be handled with the same precautions used for gasoline. Before mixing, the Safety Data Sheet for gasoline should be consulted for any precautionary measures necessary.

Section 12. Ecological Information

The information is based on data available for the material, the components of the material, and similar materials.

Ecotoxicity: No testing has been performed by the manufacturer. Ecotoxicity hazard is based on an evaluation of data for the components or a similar material. Not expected to be harmful to aquatic organisms.

Mobility:	Base oil component – Low solubility and floats and is expected to migrate from water to land. Expected to partition to sediment and wastewater solids.
Soil/water partition coefficient (K_{OC}):	Not available.
Persistence and degradation Biodegradation:	The material is not expected to be readily biodegradable. The biodegradability of this material is based on an evaluation of data for the components or a similar material.
Bioaccumulative potential Bioaccumulation:	This product is not expected to bioaccumulate through food chain in the environment.
Other adverse effects:	No known significant effects or critical hazards.
Other ecological information:	Spills may form a film on water surfaces causing physical damage to organisms. Oxygen transfer could also be impaired.

Section 13. Disposal Considerations

Disposal recommendations based on material supplied.

Waste treatment methods: This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). Consult the appropriate state, regional, or local regulations for additional requirements. The generation of waste should be avoided or minimized wherever possible.

Product waste: Significant quantities of waste product residues should not be disposed of via the sanitary sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Incineration or landfill should only be considered when recycling is not feasible. Oil collection services are available for used oil recycling.

Contaminated packaging: Empty containers or liners may retain some product residues and could pose a potential fire and explosion hazard. Do not cut, puncture, or weld containers.

Other information: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport Information

General information: Petroleum lubricating oil - Not regulated.

	DOT Classification	IMDG	IATA
Stihl HP 2-Cycle	Not Regulated	Not Regulated	Not Regulated

Special precautions for user: Transport within user's premises: Always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Section 15. Regulatory Information

United States Regulations

United States Inventory (TSCA 8b): All components are listed or exempted.

SARA 302/304: No products were found.

SARA 311/312:

Immediate (Acute) Health Effects:	No
Delayed (Chronic) Health Effects:	No
Fire Hazard:	No
Sudden Release of Pressure Hazard:	No
Reactivity Hazard:	No

SARA 313:

The following components of this material are found on the EPCRA 313 list:
None

Supplier notification: This product does not contain any hazardous ingredients at or above regulated thresholds.

CWA (Clean Water Act): This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

CERCLA: This material, as supplied, does not contain any substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302).

State Regulations

Massachusetts: None of the components are at or above regulated thresholds.
New Jersey: None of the components are at or above regulated thresholds.
Pennsylvania: None of the components are at or above regulated thresholds.

California Proposition 65: WARNING: This product contains a chemical known to the State of California to cause cancer. Ethylbenzene - <0.1

Canada

WHMIS Hazard Class: Not classified.

International Chemical Inventories:

All components comply with the following chemical inventory requirements: DSL (Canada)

Section 16. Other Information

NFPA Rating:	**Health Hazard – 1**	**Flammability – 1**	**Instability/Reactivity – 0**
HMIS Rating:	**Health Hazard – 1**	**Flammability – 1**	**Physical Hazards – 0**

(NFPA & HMIS Hazard Rating Key: 0 - Minimum Hazard; 1 - Slight Hazard; 2 - Moderate Hazard; 3 - High Hazard; 4 - Extreme Hazard; * - Chronic Hazard Indicator, & PPE - Personal Protective Equipment Index A to L. These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS or Hazardous Material Identification System).

Key to abbreviations:

OSHA = Occupational Safety and Health Administration
ACGIH= American Conference of Industrial Hygienists
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
CAS = Chemical Abstracts Service Registry Number
cSt = Centistroke (mm2/s)
GHS = Global Harmonized System of Classification and Labeling Of Chemicals.
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
OEL = Occupational Exposure Limit
SDS = Safety Data Sheet
STEL = Short term exposure Limit
UN = United Nations
UN Number = United Nations Number, a four digit number assigned by the United Nations Committee of Experts on the Transportation of Dangerous Goods

Prepared By: **OMNI Specialty Packaging EH&S Department**

Revision Date: **February 28, 2018**

Status: **Final**

Revision Note: **Revision 003 – Three year review and update.**

Consumer Product Improvement Act of 2008, General Conformity Certification

For Consumer Product Packages: This product has been evaluated and is certified to be labeled and packaged in compliance with the applicable provisions of the Federal Hazardous Substance Act as stated in 16 CFR 1500 and enforced by the Consumer Product Safety Commission. Where applicable the products that require Child Resistant Closures are packaged in accordance with the Poison Prevention Packaging Act as stated in 16 CFR 1700 and enforced by the Consumer Product Safety Commission. All closures have been tested in accordance with the latest protocols. No testing is required to certify compliance with the provisions. The date of the manufacturing is stamped on the product container.

Disclaimer

All reasonably practicable steps have been taken to ensure the information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. This information is furnished upon condition that the person receiving it shall make their own determination of the suitability of the material for their particular purpose.

End of Safety Data Sheet

SAFETY DATA SHEET
THE DOW CHEMICAL COMPANY

Product name: STYROFOAM™ CAVITYMATE™ 2.00 X 16 Inch Butt Edge Cavity Wall Extruded Foam Insulation

Issue Date: 07/30/2018

Print Date: 07/31/2018

THE DOW CHEMICAL COMPANY encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

1. IDENTIFICATION

Product name: STYROFOAM™ CAVITYMATE™ 2.00 X 16 Inch Butt Edge Cavity Wall Extruded Foam Insulation

Recommended use of the chemical and restrictions on use
Identified uses: Thermal insulation.

COMPANY IDENTIFICATION
THE DOW CHEMICAL COMPANY
2030 DOW CENTER
MIDLAND MI 48674-0000
UNITED STATES

Customer Information Number: 800-258-2436
SDSQuestion@dow.com

EMERGENCY TELEPHONE NUMBER
24-Hour Emergency Contact: CHEMTREC +1 800-424-9300
Local Emergency Contact: 800-424-9300

2. HAZARDS IDENTIFICATION

Hazard classification
GHS classification in accordance with 29 CFR 1910.1200
Combustible dust

Label elements

Signal word: **WARNING!**

Hazards
If small particles are generated during further processing, handling or by other means, may form combustible dust concentrations in air.

Other hazards
No data available

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature: Construction and composite applications
This product is an article.

Component	CASRN	Concentration
2-Propenenitrile, polymer with ethenylbenzene	9003-54-7	> 60.0 - < 100.0 %
Styrene, polymers	9003-53-6	<= 10.0 %
1,1,1,2-Tetrafluoroethane	811-97-2	>= 5.0 - <= 10.0 %

Note

Extruded polystyrene foam containing a halogenated flame retardant system.

4. FIRST AID MEASURES

Description of first aid measures
General advice:
If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Inhalation: Move person to fresh air; if effects occur, consult a physician.

Skin contact: Wash off with plenty of water.

Eye contact: Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.

Ingestion: No emergency medical treatment necessary.

Most important symptoms and effects, both acute and delayed:
Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

Indication of any immediate medical attention and special treatment needed
Notes to physician: No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. FIREFIGHTING MEASURES

Suitable extinguishing media: Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam.

Unsuitable extinguishing media: No data available

Special hazards arising from the substance or mixture
Hazardous combustion products: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. In smoldering or flaming conditions, carbon monoxide, carbon dioxide and carbon are generated. Combustion products may include and are not limited to: Hydrogen halides. Based on combustion toxicity testing, the effects of combustion from this foam are not more acutely toxic than the effects of combustion from common building materials such as wood.

Unusual Fire and Explosion Hazards: Mechanical cutting, grinding or sawing can cause formation of dusts. To reduce the potential for dust explosion, do not permit dust to accumulate. This product contains a flame retardant to inhibit accidental ignition from small fire sources. This plastic foam product is combustible and should be protected from flames and other high heat sources. For more information, contact Dow. Dense smoke is produced when product burns.

Advice for firefighters
Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Soak thoroughly with water to cool and prevent re-ignition. If material is molten, do not apply direct waterstream. Use fine water spray or foam. Cool surroundings with water to localize fire zone.

Special protective equipment for firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Environmental precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

Methods and materials for containment and cleaning up: Contain spilled material if possible. Collect in suitable and properly labeled containers. See Section 13, Disposal Considerations, for additional information.

7. HANDLING AND STORAGE

Precautions for safe handling: Fabrication methods which involve cutting into this product may release the blowing agent(s) remaining in the cells. Use ventilation adequate to keep exposures below recommended exposure limits. See the safety datasheet. Do not enter confined spaces unless adequately ventilated. Mechanical cutting, grinding or sawing can cause formation of dusts. To reduce the potential for dust explosion, do not permit dust to accumulate. This product is combustible and

may constitute a fire hazard if improperly used or installed. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Conditions for safe storage: When large quantities of this product are stored or fabricated, blowing agents may be released. Released blowing agents may thermally decompose to form gases which may accelerate corrosion or rust formation of heaters, boilers, gas fired recirculating air furnaces or heaters, or gas water heaters.

Storage stability
Shelf life: Use within 360 Month

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters
If exposure limits exist, they are listed below. If no exposure limits are displayed, then no values are applicable.

Component	Regulation	Type of listing	Value/Notation
1,1,1,2-Tetrafluoroethane	US WEEL	TWA	1,000 ppm

Concentrations of the blowing agents anticipated incidental to proper handling are expected to be well below those which cause acute inhalation effects and below exposure guidelines.

Exposure controls
Engineering controls: Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

Individual protection measures

Eye/face protection: Eye protection should not be necessary. For fabrication operations safety glasses (with side shields) are recommended. If there is a potential for exposure to particles which could cause eye discomfort, wear chemical goggles.

Skin protection

Hand protection: Use gloves to protect from mechanical injury. Selection of gloves will depend on the task.

Other protection: No precautions other than clean body-covering clothing should be needed.

Respiratory protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. In dusty or misty atmospheres, use an approved particulate respirator. When respiratory protection is required for certain operations, including but not limited to saw, router or hot-wire cutting, use an approved air-purifying respirator.
The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	
Physical state	Board
Color	Blue
Odor	None
Odor Threshold	Odorless
pH	Not applicable
Melting point/range	90 - 130 °C (194 - 266 °F) *Estimated.*
Freezing point	Not applicable
Boiling point (760 mmHg)	Not applicable
Flash point	**closed cup** Not applicable
Evaporation Rate (Butyl Acetate = 1)	Not applicable
Flammability (solid, gas)	May form combustible dust concentrations in air during processing, handling or other means.
Lower explosion limit	Not applicable
Upper explosion limit	Not applicable
Vapor Pressure	Not applicable
Relative Vapor Density (air = 1)	Not applicable
Relative Density (water = 1)	0.027 - 0.064 *Estimated.*
Water solubility	Insoluble in water
Partition coefficient: n-octanol/water	No data available
Auto-ignition temperature	354 °C (669 °F) *ASTM D1929*
Decomposition temperature	No test data available
Kinematic Viscosity	Not applicable
Explosive properties	No
Oxidizing properties	No
Molecular weight	No test data available

NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY AND REACTIVITY

Reactivity: No dangerous reaction known under conditions of normal use.

Chemical stability: Thermally stable at typical use temperatures.

Possibility of hazardous reactions: Polymerization will not occur.

Conditions to avoid: Avoid temperatures above 300°C (572°F) Exposure to elevated temperatures can cause product to decompose. Avoid direct sunlight.

Incompatible materials: Avoid contact with oxidizing materials. Avoid contact with: Aldehydes. Amines. Esters. Liquid fuels. Organic solvents.

Hazardous decomposition products: Does not normally decompose. Evolution of small amounts of hydrogen halides occur when heated over 250°C (482°F). Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Aromatic compounds. Aldehydes. Ethylbenzene. Hydrogen halides. Polymer fragments. Styrene. Under high heat, non-flaming conditions, small amounts of aromatic hydrocarbons such as styrene and ethylbenzene are generated.

11. TOXICOLOGICAL INFORMATION

Toxicological information appears in this section when such data is available.

Acute toxicity

Acute oral toxicity
Swallowing is unlikely because of the physical state. Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.
As product: Single dose oral LD50 has not been determined.

Acute dermal toxicity
Skin absorption is unlikely due to physical properties.
As product: The dermal LD50 has not been determined.

Acute inhalation toxicity
Dust may cause irritation to upper respiratory tract (nose and throat). Fumes/vapors released during thermal operations such as hot wire cutting may cause respiratory irritation.
Concentrations of the blowing agents anticipated incidental to proper handling are expected to be well below those which cause acute inhalation effects and below exposure guidelines.

The LC50 has not been determined.,

Skin corrosion/irritation
Essentially nonirritating to skin.
Mechanical injury only.

Serious eye damage/eye irritation
Solid or dust may cause irritation or corneal injury due to mechanical action.
Fumes/vapor released during thermal operations such as hot-wire cutting may cause eye irritation.

Sensitization
Relevant data not available.

For respiratory sensitization:
Relevant data not available.

Specific Target Organ Systemic Toxicity (Single Exposure)
Available data are inadequate to determine single exposure specific target organ toxicity.

Specific Target Organ Systemic Toxicity (Repeated Exposure)
Based on available data, repeated exposures are not anticipated to cause significant adverse effects.

Additives are encapsulated in the product and are not expected to be released under normal processing conditions or foreseeable emergency.

Carcinogenicity
Relevant data not available.

Teratogenicity
Contains a component(s) that is/are encapsulated in the product and are not expected to be released under normal processing conditions or foreseeable emergency

Reproductive toxicity
Contains a component(s) that is/are encapsulated in the product and are not expected to be released under normal processing conditions or foreseeable emergency

Mutagenicity
Relevant data not available.

Aspiration Hazard
Based on physical properties, not likely to be an aspiration hazard.

COMPONENTS INFLUENCING TOXICOLOGY:

2-Propenenitrile, polymer with ethenylbenzene

Acute oral toxicity
LD50, Rat, > 5,000 mg/kg Estimated.

Acute dermal toxicity
For similar material(s): LD50, Rabbit, > 2,000 mg/kg Estimated.

Styrene, polymers

Acute oral toxicity
Single dose oral LD50 has not been determined.

Acute dermal toxicity
The dermal LD50 has not been determined.

1,1,1,2-Tetrafluoroethane

Acute oral toxicity
Single dose oral LD50 has not been determined.

Acute dermal toxicity
The dermal LD50 has not been determined.

12. ECOLOGICAL INFORMATION

Ecotoxicological information appears in this section when such data is available.

Toxicity

Acute toxicity to fish
Not expected to be acutely toxic to aquatic organisms.

Persistence and degradability

Biodegradability: Surface photodegradation is expected with exposure to sunlight. No appreciable biodegradation is expected.

Bioaccumulative potential

Bioaccumulation: No bioconcentration is expected because of the relatively high molecular weight (MW greater than 1000).

Mobility in soil

In the terrestrial environment, material is expected to remain in the soil.

13. DISPOSAL CONSIDERATIONS

Disposal methods: DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. AS YOUR SUPPLIER, WE HAVE NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION: Composition Information. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Recycler. Reclaimer. Landfill. Incinerator or other thermal destruction device.

14. TRANSPORT INFORMATION

DOT

Not regulated for transport

Classification for SEA transport (IMO-IMDG):

Not regulated for transport

Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code	Consult IMO regulations before transporting ocean bulk

Classification for AIR transport (IATA/ICAO):

Not regulated for transport

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. REGULATORY INFORMATION

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312
Combustible dust

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Pennsylvania Worker and Community Right-To-Know Act:
To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

California Prop. 65
This product contains a chemical that is at or below California Propositions 65's "safe harbor level" as determined via a risk assessment. Therefore, the chemical is not required to be listed as a Prop 65 chemical on the SDS or label.

United States TSCA Inventory (TSCA)
The product meets the definition of an article and is exempt from inventory requirements.

16. OTHER INFORMATION

Revision
Identification Number: 9846 / A001 / Issue Date: 07/30/2018 / Version: 12.0
Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend

TWA	8-hr TWA
US WEEL	USA. Workplace Environmental Exposure Levels (WEEL)

Full text of other abbreviations
AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International

Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Information Source and References
This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

THE DOW CHEMICAL COMPANY urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.
US

WARNING

Hazards: If small particles are generated during further processing, handling or by other means, may form combustible dust concentrations in air.

Refer to the Safety Data Sheet before use.

COMPANY IDENTIFICATION
THE DOW CHEMICAL COMPANY
2030 DOW CENTER
MIDLAND MI 48674-0000
UNITED STATES

EMERGENCY TELEPHONE NUMBER
24-Hour Emergency Contact:
CHEMTREC +1 800-424-9300
Local Emergency Contact:
800-424-9300

Customer Information Number:
800-258-2436

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Revision
Identification Number: 9846 / A001 / Issue Date: 07/30/2018 / Version: 12.0

SAFETY DATA SHEET
THE DOW CHEMICAL COMPANY

Product name: STYROFOAM™ 2.00 x 50 Inch Panel Core 30 Extruded Foam Insulation

Issue Date: 04/17/2015

Print Date: 08/31/2015

THE DOW CHEMICAL COMPANY encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

1. IDENTIFICATION

Product name: STYROFOAM™ 2.00 x 50 Inch Panel Core 30 Extruded Foam Insulation

Recommended use of the chemical and restrictions on use
Identified uses: Thermal insulation.

COMPANY IDENTIFICATION
THE DOW CHEMICAL COMPANY
2030 WILLARD H DOW CENTER
MIDLAND MI 48674-0000
UNITED STATES

Customer Information Number: 800-258-2436
SDSQuestion@dow.com

EMERGENCY TELEPHONE NUMBER
24-Hour Emergency Contact: 800-424-9300
Local Emergency Contact: 800-424-9300

2. HAZARDS IDENTIFICATION

Hazard classification
This material is not hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.

Other hazards
no data available

3. COMPOSITION/INFORMATION ON INGREDIENTS

This product is a mixture.

Component	CASRN	Concentration
2-Propenenitrile, polymer with ethenylbenzene	9003-54-7	> 60.0 - < 100.0 %

Styrene, polymers	9003-53-6	>= 0.0 - <= 10.0 %
1,1,1,2-Tetrafluoroethane	811-97-2	>= 5.0 - <= 10.0 %

Note
Extruded styrenic polymer foam containing a halogenated flame retardant system.

4. FIRST AID MEASURES

Description of first aid measures
General advice: If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Inhalation: Move person to fresh air; if effects occur, consult a physician.

Skin contact: Wash off with plenty of water.

Eye contact: Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.

Ingestion: No emergency medical treatment necessary.

Most important symptoms and effects, both acute and delayed: Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

Indication of any immediate medical attention and special treatment needed
Notes to physician: No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. FIREFIGHTING MEASURES

Suitable extinguishing media: Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam.

Unsuitable extinguishing media: no data available

Special hazards arising from the substance or mixture
Hazardous combustion products: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. In smoldering or flaming conditions, carbon monoxide, carbon dioxide and carbon are generated. Combustion products may include and are not limited to: Hydrogen halides. Based on combustion toxicity testing, the effects of combustion from this foam are not more acutely toxic than the effects of combustion from common building materials such as wood.

Unusual Fire and Explosion Hazards: Mechanical cutting, grinding or sawing can cause formation of dusts. To reduce the potential for dust explosion, do not permit dust to accumulate. This product

contains a flame retardant to inhibit accidental ignition from small fire sources. This plastic foam product is combustible and should be protected from flames and other high heat sources. For more information, contact Dow. Dense smoke is produced when product burns.

Advice for firefighters
Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Soak thoroughly with water to cool and prevent re-ignition. If material is molten, do not apply direct waterstream. Use fine water spray or foam. Cool surroundings with water to localize fire zone.

Special protective equipment for firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Environmental precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

Methods and materials for containment and cleaning up: Contain spilled material if possible. Collect in suitable and properly labeled containers. See Section 13, Disposal Considerations, for additional information.

7. HANDLING AND STORAGE

Precautions for safe handling: Fabrication methods which involve cutting into this product may release the blowing agent(s) remaining in the cells. Use ventilation adequate to keep exposures below recommended exposure limits. See the safety datasheet. Do not enter confined spaces unless adequately ventilated. Mechanical cutting, grinding or sawing can cause formation of dusts. To reduce the potential for dust explosion, do not permit dust to accumulate. This product is combustible and may constitute a fire hazard if improperly used or installed. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Conditions for safe storage: When large quantities of this product are stored or fabricated, blowing agents may be released. Released blowing agents may thermally decompose to form gases which may accelerate corrosion or rust formation of heaters, boilers, gas fired recirculating air furnaces or heaters, or gas water heaters.

Storage stability
Shelf life: Use within 360 Month

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters
Exposure limits are listed below, if they exist.

Component	Regulation	Type of listing	Value/Notation

1,1,1,2-Tetrafluoroethane	US WEEL	TWA	1,000 ppm

Concentrations of the blowing agents anticipated incidental to proper handling are expected to be well below those which cause acute inhalation effects and below exposure guidelines.

Exposure controls
Engineering controls: Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

Individual protection measures

Eye/face protection: Eye protection should not be necessary. For fabrication operations safety glasses (with side shields) are recommended. If there is a potential for exposure to particles which could cause eye discomfort, wear chemical goggles.

Skin protection

Hand protection: Use gloves to protect from mechanical injury. Selection of gloves will depend on the task.

Other protection: No precautions other than clean body-covering clothing should be needed.

Respiratory protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. In dusty or misty atmospheres, use an approved particulate respirator. When respiratory protection is required for certain operations, including but not limited to saw, router or hot-wire cutting, use an approved air-purifying respirator.
The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	
Physical state	Board
Color	Blue
Odor	None
Odor Threshold	Odorless
pH	Not applicable
Melting point/range	90 - 130 °C (194 - 266 °F) *Estimated.*
Freezing point	Not applicable
Boiling point (760 mmHg)	Not applicable
Flash point	**closed cup** Not applicable
Evaporation Rate (Butyl Acetate = 1)	Not applicable
Flammability (solid, gas)	No
Lower explosion limit	Not applicable
Upper explosion limit	Not applicable
Vapor Pressure	Not applicable

Relative Vapor Density (air = 1)	Not applicable
Relative Density (water = 1)	0.027 - 0.064 *Estimated.*
Water solubility	Insoluble in water
Partition coefficient: n-octanol/water	no data available
Auto-ignition temperature	354 °C (669 °F) *ASTM D1929*
Decomposition temperature	No test data available
Kinematic Viscosity	Not applicable
Explosive properties	No
Oxidizing properties	No
Molecular weight	No test data available

NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY AND REACTIVITY

Reactivity: No dangerous reaction known under conditions of normal use.

Chemical stability: Thermally stable at typical use temperatures.

Possibility of hazardous reactions: Polymerization will not occur.

Conditions to avoid: Avoid temperatures above 300°C (572°F) Exposure to elevated temperatures can cause product to decompose. Avoid direct sunlight.

Incompatible materials: Avoid contact with oxidizing materials. Avoid contact with: Aldehydes. Amines. Esters. Liquid fuels. Organic solvents.

Hazardous decomposition products: Does not normally decompose. Evolution of small amounts of hydrogen halides occur when heated over 250°C (482°F). Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Aromatic compounds. Aldehydes. Ethylbenzene. Hydrogen halides. Polymer fragments. Styrene. Under high heat, non-flaming conditions, small amounts of aromatic hydrocarbons such as styrene and ethylbenzene are generated.

11. TOXICOLOGICAL INFORMATION

Toxicological information on this product or its components appear in this section when such data is available.

Acute toxicity

Acute oral toxicity

Swallowing is unlikely because of the physical state. Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.

As product: Single dose oral LD50 has not been determined.

Acute dermal toxicity
Skin absorption is unlikely due to physical properties.
As product: The dermal LD50 has not been determined.

Acute inhalation toxicity
Dust may cause irritation to upper respiratory tract (nose and throat). Fumes/vapors released during thermal operations such as hot wire cutting may cause respiratory irritation. Concentrations of the blowing agents anticipated incidental to proper handling are expected to be well below those which cause acute inhalation effects and below exposure guidelines.

The LC50 has not been determined.,

Skin corrosion/irritation
Essentially nonirritating to skin.
Mechanical injury only.

Serious eye damage/eye irritation
Solid or dust may cause irritation or corneal injury due to mechanical action.
Fumes/vapor released during thermal operations such as hot-wire cutting may cause eye irritation.

Sensitization
Relevant data not available.

For respiratory sensitization:
Relevant data not available.

Specific Target Organ Systemic Toxicity (Single Exposure)
Available data are inadequate to determine single exposure specific target organ toxicity.

Specific Target Organ Systemic Toxicity (Repeated Exposure)
Based on available data, repeated exposures are not anticipated to cause significant adverse effects. Additives are encapsulated in the product and are not expected to be released under normal processing conditions or foreseeable emergency.

Carcinogenicity
Relevant data not available.

Teratogenicity
Contains a component(s) that is/are encapsulated in the product and are not expected to be released under normal processing conditions or foreseeable emergency

Reproductive toxicity
Contains a component(s) that is/are encapsulated in the product and are not expected to be released under normal processing conditions or foreseeable emergency

Mutagenicity
Relevant data not available.

Aspiration Hazard
Based on physical properties, not likely to be an aspiration hazard.

COMPONENTS INFLUENCING TOXICOLOGY:

2-Propenenitrile, polymer with ethenylbenzene

Acute oral toxicity
LD50, Rat, > 5,000 mg/kg Estimated.

Acute dermal toxicity
The dermal LD50 has not been determined.

For similar material(s): LD50, Rabbit, > 2,000 mg/kg Estimated.

Styrene, polymers

Acute oral toxicity
Single dose oral LD50 has not been determined.

Acute dermal toxicity
The dermal LD50 has not been determined.

1,1,1,2-Tetrafluoroethane

Acute oral toxicity
Single dose oral LD50 has not been determined.

Acute dermal toxicity
The dermal LD50 has not been determined.

12. ECOLOGICAL INFORMATION

Ecotoxicological information on this product or its components appear in this section when such data is available.

Toxicity

Acute toxicity to fish
Not expected to be acutely toxic to aquatic organisms.

Persistence and degradability

Biodegradability: Surface photodegradation is expected with exposure to sunlight. No appreciable biodegradation is expected. 1,1,1,2-tetrafluoroethane (HFC-134a) remains in the foam and diffuses out slowly, most of it degrading in the troposphere to CO2 and HF. 1,1,1,2-Tetrafluoroethane (HFC-134a) has a stratospheric ozone depletion potential (ODP) of zero, relative to CFC 12 (ODP=1).

Bioaccumulative potential

Bioaccumulation: No bioconcentration is expected because of the relatively high molecular weight (MW greater than 1000).

Mobility in soil

In the terrestrial environment, material is expected to remain in the soil.
In the aquatic environment, material is expected to float.

13. DISPOSAL CONSIDERATIONS

Disposal methods: DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. AS YOUR SUPPLIER, WE HAVE NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION: Composition Information. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Recycler. Reclaimer. Landfill. Incinerator or other thermal destruction device.

14. TRANSPORT INFORMATION

DOT

Not regulated for transport

Classification for SEA transport (IMO-IMDG):

Not regulated for transport

Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code: Consult IMO regulations before transporting ocean bulk

Classification for AIR transport (IATA/ICAO):

Not regulated for transport

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. REGULATORY INFORMATION

OSHA Hazard Communication Standard
This product is not a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312

This product is not a hazardous chemical under 29CFR 1910.1200, and therefore is not covered by Title III of SARA.

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Pennsylvania Worker and Community Right-To-Know Act:
To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)
This product contains no listed substances knownto the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

United States TSCA Inventory (TSCA)
The product meets the definition of an article and is exempt from inventory requirements.

16. OTHER INFORMATION

Hazard Rating System
NFPA

Health	Fire	Reactivity
1	1	0

Revision
Identification Number: 101195574 / A001 / Issue Date: 04/17/2015 / Version: 10.0
Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend

TWA	8-hr TWA
US WEEL	USA. Workplace Environmental Exposure Levels (WEEL)

Information Source and References
This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

THE DOW CHEMICAL COMPANY urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the

control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.

SUPREX GOLD HEAVY DUTY ENGINE OIL

MANUFACTURER:
GROWMARK, Inc.
2200 South Ave
Council Bluffs, IA 51501
PHONE:(712) 322-4038
FAX:(712) 322-2749

Section I—product information

PRODUCT NAME: Suprex Gold Heavy Duty Engine Oils
SAE 10W30, 15W40, & 30
LATEST REVISION DATE: March 18, 2004
GENERAL OR GENERIC ID: Petroleum Based Lubricating Oil
CAS NUMBER: Mixture

SECTION II—COMPONENTS/INGREDIENTS

Components	%	Exposure Limits-Ref
1) Hydrotreated heavy paraffinic Petroleum distillates (group II Basestock) CAS No: 64742-54-7	70.0-88.0	5mg/m3 ACGIH TLV, OSHA Pel for mineral oil mists
2) Performance additive package Containing calcium sulfonate And zinc dialkyldithiophosphate (see section XIII) CAS No: Mixture	12.0-18.0	None Established
3) Viscosity Improver containing An Olefin copolymer in mineral oil CAS No: Mixture	0.0-10.0	None Established
4)Other components not determined To be hazardous or present at Less than 1.0% (0.1% for carcinogens) CAS No. Mixture	trace	Not Applicable

Section III—Product Health Hazard Information

ROUTE OF EXPOSURE:
SKIN CONTACT:
EFFECTS OF OVEREXPOSURE:
Estimated rabbit dermal LD50=>5 gm/kg. Slightly to moderately irritating. Repeated or prolonged contact may cause defatting, oil acne, redness, itching, inflammation, cracking and possible secondary infection. May cause allergic reaction in some individuals. Contact with heated material may cause thermal burns. High pressure skin injections are serious medical emergencies. Also see section XIII– GENERAL COMMENTS

EYE CONTACT:
EFFECTS OF OVEREXPOSURE: Slightly to moderately irritating, may cause redness and tearing. Contact with heated material may cause thermal burns.

INGESTION:
EFFECTS OF OVEREXPOSURE: Practically non-toxic. Estimated rat oral LD50=>5 gm/kg. Aspiration into lungs may cause pneumonitis. May cause gastrointestinal disturbances. Symptoms Include irritation, nausea, vomiting & diarrhea.

INHALATION:
EFFECTS OF OVEREXPOSURE: May cause respiratory tract irritation. Exposure to high concentrates Of mist oil may lead to pneumonia.

Section IV—Emergency First Aid

INGESTION: Do not induce vomiting because of danger of aspirating liquid into lungs. If spontaneous vomiting occurs, monitor for breathing difficulty. Get medical attention immediately.
SKIN CONTACT: Remove contaminated clothing immediately. Wash exposed area thoroughly with Soap and water. Get medical attention if irritation persists. Thermal burns require immediate medical attention. High pressure skin injections are serious medical emergencies. Get immediate medical attention. Launder contaminated clothing before re-use.
EYE CONTACT: Flush immediately with large amounts of water, lifting upper and lower lids occasionally. Get medical attention if irritation persists. Thermal burns require immediate medical attention.
INHATLATION: Remove the affected person to fresh air. If breathing is difficult, administer oxygen. If breathing has stopped, give artificial respiration. Keep person warm, quiet and get medical attention.

Section V—Notes to Physician

Aspiration of medium viscosity petroleum hydrocarbons may cause severe pneumonitis (oil pneumonia). Vomiting should not be induced. In general, emesis induction is unnecessary in high viscosity, low volatility products, i.e., most oils and greases. If vomiting is induced, use of an endotracheal tube should be considered.

Section VI—Physical data

Boiling Point, Deg C (Deg F): Not determined
Melting Point, Deg C (Deg F) : Not Determined
Vapor Pressure, MM HG: <0.1 @ 100 Deg F
Vapor Density (air=1) : Heavier
Specific Gravity : 0.89 @ 60 Deg F
Solubility in water, %: Negligible
% Volatility by volume : 0 @ 100 deg F
Evaporation rate (water = 1) : Very Slow
Viscosity, cSt: 9.3—16.5 @ 100 deg C
Appearance/Odor: Amber Color with characteristic petroleum oil odor.
Note: The above information is not intended for reference as product specifications.

Section vii—fire and explosion hazards

FLASH POINT, Deg C (Deg F) : 221 (430)
FLAMMABILITY LIMITS, % VOLUME IN AIR : no Data
EXTINGUISHING MEDIA: Water Spray, Dry Chemical, Foam, Carbon Dioxide
FIRE FIGHTING PROCEDURES AND PRECAUTIONS: Water or foam may cause frothing which can be violent and may endanger the firefighter, especially if sprayed into containers of hot , burning liquid. Wear MSHA/NIOSH approved self contained breathing apparatus with a full face mask operated in pressure demand or other positive pressure mode. Use full protective equipment. Use water spray to cool fire-exposed containers, structures and to protect personnel. Use water to flush spills away from sources of ignition. Do not flush down public sewers.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Combustible at high temperatures. Irritating or toxic substances may be emitted upon thermal decomposition. Never use welding or cutting torch on or near drum (even empty) because product (even residue) can ignite explosively.
NFPA CODES:
Health: 1
Flammability: 1
Reactivity: 0

Section viii—reactivity data

STABILITY/INCOMPATABILITY: Stable under normal conditions of use. Avoid contact with strong oxidizers.
HAZARDOUS REACTIONS/DECOMPOSITION PRODUCTS: Combustion may produce CO,CO2 and reactive hydrocarbons.

Section ix—employee protection

SKIN PROTECTION: Wear impervious gloves and protective clothing to prevent skin contact.
EYE PROTECTION: Wear safety glasses or chemical goggles to prevent eye contact. Have eye baths readily available where eye contact can occur. Do not wear contact lenses when working with this substance.
RESPIRATORY PROTECTION: Use NIOSH or MSHA approved equipment when airborne exposure limits are exceeded. Ventilation may be used to control or reduce airborne concentrations.

Section x—environmental protection

SPILL OR LEAK PROCEDURES: Take immediate steps to stop and contain spill.
SMALL SPILLS: Take up with sand or other non-combustible absorbent material or other sorbent known to be compatible, then flush area with water.
LARGE SPILLS: Dike far ahead of spill. Pump Liquid to salvage tank. Remaining liquid may be taken up with sand, earth or other compatible absorbent.
NOTE: Keep all unnecessary or unprotected personnel away. Eliminate all ignition sources. Prevent run-off to sewers, streams, or other bodies of water. A release causing visible sheen on surface water must be reported immediately to the National Response Center (800-424-8802) as required by U.S. Federal Law. Failure to report may result in substantial civil and criminal penalties.
WASTE DISPOSAL: This substance when discarded or disposed of, is not specifically listed as a hazardous waste in Federal regulations; however, it could be hazardous if it is considered toxic, corrosive, ignitable or reactive according to Federal definition (40CFR261) Additionally, it could also be designated as a hazardous waste, if it is mixed or comes in contact with a hazardous waste. The transportation, storage, treatment and disposal of this waste material must be conducted in compliance with all applicable Federal, State and local regulations.
SARA TITLE III INFORMATION:
SECTION 313 STATUS: Zinc Compounds: 1-3% (0.12% Zn)
LISTED BELOW ARE THE HAZARD CATEGORIESFOR THE SUPERFUND AMENDMENTS AND EEAUTHORIZATION ACT (SARA) SESTION 311/312 (40 CFR 370):
Immediate Hazard:
Delayed Hazard : X
Fire Hazard :
Pressure Hazard :
Reactivity Hazard:
ADDITIONAL INFORMATION: There may be specific regulations at the local, regional or state level that pertain to this material.

Section xi—special precaution/supplemental information

HANDLING/STORAGE: Avoid extremes of temperature in storage. Store tightly closed containers in cool, dry, well ventilated areas away from heat, sources of ignition and incompatibles. Do not store in unlabeled containers. Do not eat, drink or smoke in areas of use. Empty containers may contain flammable/combustible or explosive residue or vapors. Do not cut, grind, drill, weld or re-use container unless adequate precautions are taken.

Section xii—transportation requirements

D.O.T Hazard Class (49 CFR 172.101): Not Applicable
D.O.T Proper Shipping name (49 CFR 172-101) Not Applicable
D.O.T Labels Required: Not Applicable
D.O.T Placards Required: Not Applicable
BILL OF LADING DESCRIPTION: Lubricating oil (motor), Petroleum Lubricating Oil (rail)
UN/NA CODE: Not Applicable

Section xiii—general comments

The specific chemical identities of some components have been withheld as a trade secret. This material does contain zinc dialkyldithiophosphate which when applied to the skin of male rabbits over a period of time caused severe irritation and adverse testicular effects.
The American petroleum institute has determined that paraffinic lube oil stocks are “not more than slightly carcinogenic” to experimental animals. However, IARC has determined that “there is no evidence that severely solvent refined oils are carcinogenic to experimental animals”.

EFFECTIVE DATE: March 25th, 2004
COMPLETED BY: E. A. Cooper
APPROVED BY: C. Stout

NOTICE: the information contained herein is based on data considered accurate. However, no warranty is expressed or implied regarding the accuracy of these data or the results to be obtained from the use thereof. Vendor assumes no responsibility for injury to vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheets. Additionally, vendor assumes no responsibility for injury to vendee or third persons proximately caused by abnormal use of the material even if reasonable safety procedures are followed. Furthermore, vendee assumes the risk in his use of the material.

DISCLAIMER OF EXPRESSED AND IMPLIED WARRANTIES: Although preparer and owner have taken reasonable care in preparation of this document, we extend no warranties and make no representation as to the accuracy or completeness of the information contained herein, and assume no responsibility regarding the suitability of this information for the user’s intended purposes or for the consequences of its use. Each user should make a determination as to the suitability of the information for their particular purpose (s). A request has been made to the manufacturer to approve the contents of this material safety data sheet. Upon receipt of any changes a new MSDS will be made available
COMPAS Code : 29190840
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SAFETY DATA SHEET
PROSOCO, Inc.

Issue Date 06-Aug-2014 **Revision Date** 07-Apr-2015 **Version** 3.01

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier
Product Name Sure Klean® 600

Other means of identification
Product Code 10020
UN/ID No UN3264

Recommended use of the chemical and restrictions on use
Recommended Use Restricted to professional users.
Uses advised against No information available

Details of the supplier of the safety data sheet
Manufacturer Address
PROSOCO, Inc.
3741 Greenway Circle
Lawrence, Kansas 66046
Emergency telephone number
8:00 AM – 5:00 PM CST Monday-Friday 785-865-4200
NON-BUSINESS HOURS (INFOTRAC) 800-535-5053

2. HAZARDS IDENTIFICATION

Classification

Acute toxicity - Inhalation (Gases)	Category 4
Acute toxicity - Inhalation (Dusts/Mists)	Category 2
Skin corrosion/irritation	Category 1 Sub-category B
Serious eye damage/eye irritation	Category 1
Specific target organ toxicity (single exposure)	Category 3

Label elements

Emergency Overview

Danger

Hazard statements
Fatal if inhaled
Causes severe skin burns and eye damage
May cause respiratory irritation



Appearance clear **Physical state** Liquid **Odor** Pungent

Precautionary Statements - Prevention
Use only outdoors or in a well-ventilated area
Do not breathe dust/fume/gas/mist/vapors/spray
Wear respiratory protection
Wash face, hands and any exposed skin thoroughly after handling
Wear protective gloves/protective clothing/eye protection/face protection

Precautionary Statements - Response
Immediately call a POISON CENTER or doctor/physician
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
Immediately call a POISON CENTER or doctor/physician
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
Wash contaminated clothing before reuse
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Call a POISON CENTER or doctor/physician if you feel unwell
Immediately call a POISON CENTER or doctor/physician
IF SWALLOWED: Rinse mouth. DO NOT induce vomiting

Precautionary Statements - Storage
Store in a well-ventilated place. Keep container tightly closed
Store locked up

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)
Other Information
• May be harmful if swallowed

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%	Trade Secret
Water	7732-18-5	60 - 100	*
Hydrogen Chloride	7647-01-0	10 - 30	*

* The exact percentage (concentration) of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

First aid measures

General advice Immediate medical attention is required.

Eye contact Keep eye wide open while rinsing. Immediate medical attention is required. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Do not rub affected area.

Skin Contact Immediate medical attention is required. Remove contaminated clothing and shoes. Wash off immediately with plenty of water for at least 15 minutes. Wash contaminated clothing before reuse.

Inhalation Remove to fresh air. Call a physician or poison control center immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Ingestion Call a physician or poison control center immediately. Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Remove from exposure, lie down. Never give anything by mouth to an unconscious person.

Self-protection of the first aider Use personal protective equipment as required. Avoid contact with skin, eyes or clothing.

Most important symptoms and effects, both acute and delayed

Symptoms The product causes burns of eyes, skin and mucous membranes.

Indication of any immediate medical attention and special treatment needed

Note to physicians Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure. Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media Caution: Use of water spray when fighting fire may be inefficient.

Specific hazards arising from the chemical
The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating and toxic gases and vapors. In the event of fire and/or explosion do not breathe fumes.

Protective equipment and precautions for firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Use personal protective equipment as required. Evacuate personnel to safe areas. Avoid contact with skin, eyes or clothing. Keep people away from and upwind of spill/leak.

Environmental precautions

Environmental precautions Do not allow into any sewer, on the ground or into any body of water. Should not be released into the environment. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. See Section 12 for additional ecological information.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up Soak up with inert absorbent material. Prevent product from entering drains. Pick up and transfer to properly labeled containers. Clean contaminated surface thoroughly. After cleaning, flush away traces with water.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. Ensure adequate ventilation, especially in confined areas. In case of insufficient ventilation, wear suitable respiratory equipment. Use only with adequate ventilation and in closed systems.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep container tightly closed in a dry and well-ventilated place. Keep out of the reach of children. Keep in properly labeled containers.

Incompatible materials Incompatible with strong acids and bases. Incompatible with oxidizing agents. Metals.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines .

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Hydrogen Chloride 7647-01-0	Ceiling: 2 ppm	(vacated) Ceiling: 5 ppm (vacated) Ceiling: 7 mg/m³ Ceiling: 5 ppm Ceiling: 7 mg/m³	IDLH: 50 ppm Ceiling: 5 ppm Ceiling: 7 mg/m³

NIOSH IDLH Immediately Dangerous to Life or Health

Other Information Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

Appropriate engineering controls

Engineering Controls Showers. Eyewash stations. Ventilation systems. Application equipment, scaffolding, swing stages and support systems must be constructed of acid resistant materials. Brush on or apply at the lowest practical pressure. Do not atomize during application. Beware of wind drift. Proper work practices and planning should be utilized to avoid contact with workers, passersby, and non-masonry surfaces.

Individual protection measures, such as personal protective equipment

Eye/face protection Tight sealing safety goggles. Face protection shield.

Skin and body protection Wear protective gloves and protective clothing.

Respiratory protection If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

General Hygiene Considerations When using do not eat, drink or smoke. Keep away from food, drink and animal feeding stuffs. Regular cleaning of equipment, work area and clothing is recommended. Avoid contact with skin, eyes or clothing. Take off all contaminated clothing and wash it before reuse.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Liquid		
Appearance	clear	**Odor**	Pungent
Color	Slight amber	**Odor threshold**	No information available

Property	Values	Remarks • Method
pH	0.1	@ 1:9 Dilution
Melting point/freezing point	-30 °C / -22 °F	
Boiling point/boiling range	No information available	
Flash point		Not Applicable
Evaporation rate	No information available	
Flammability (solid, gas)	No information available	
Flammability Limits in Air		

Upper flammability limits	No information available
Lower flammability limit	No information available
Vapor pressure	No information available
Vapor density	No information available
Specific Gravity	1.13
Water solubility	completely soluble
Solubility in other solvents	No information available
Partition coefficient	No information available
Autoignition temperature	No information available
Decomposition temperature	No information available
Kinematic viscosity	No information available
Dynamic viscosity	No information available

10. STABILITY AND REACTIVITY

Reactivity
No data available

Chemical stability
Stable under recommended storage conditions.
Possibility of Hazardous Reactions
None under normal processing.
Conditions to avoid
Exposure to air or moisture over prolonged periods.
Incompatible materials
Incompatible with strong acids and bases. Incompatible with oxidizing agents. Metals.
Hazardous Decomposition Products
Thermal decomposition can lead to release of irritating and toxic gases and vapors.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information Corrosive Harmful by inhalation, in contact with skin and if swallowed

Inhalation Avoid breathing vapors or mists. Harmful by inhalation.

Eye contact Corrosive to the eyes and may cause severe damage including blindness.

Skin Contact Corrosive. Causes severe burns.

Ingestion Harmful if swallowed. Can burn mouth, throat, and stomach.

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Water 7732-18-5	> 90 mL/kg (Rat)	-	-
Hydrogen Chloride 7647-01-0	= 700 mg/kg (Rat)	> 5010 mg/kg (Rabbit)	= 3124 ppm (Rat) 1 h

Information on toxicological effects

Symptoms The product causes burns of eyes, skin and mucous membranes.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization	No information available.
Germ cell mutagenicity	No information available.
Carcinogenicity	This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.

Reproductive toxicity No information available.
STOT - single exposure No information available.
STOT - repeated exposure No information available.
Chronic toxicity Chronic exposure to corrosive fumes/gases may cause erosion of the teeth followed by jaw necrosis. Bronchial irritation with chronic cough and frequent attacks of pneumonia are common. Gastrointestinal disturbances may also be seen. Avoid repeated exposure. Possible risk of irreversible effects.
Target Organ Effects Eyes, Respiratory system, Skin.
Aspiration hazard Risk of serious damage to the lungs (by aspiration).

Numerical measures of toxicity - Product Information

The following values are calculated based on chapter 3.1 of the GHS document .
ATEmix (oral) 2625 mg/kg
ATEmix (dermal) 18785 mg/kg
ATEmix (inhalation-gas) 5857 mg/l
ATEmix (inhalation-dust/mist) 0.2 mg/l

12. ECOLOGICAL INFORMATION

Ecotoxicity

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Hydrogen Chloride 7647-01-0	-	282: 96 h Gambusia affinis mg/L LC50 static	-	-

Persistence and degradability
No information available.

Bioaccumulation
No information available.

Other adverse effects No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal of wastes Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated packaging Do not reuse container.

US EPA Waste Number D002

This product contains one or more substances that are listed with the State of California as a hazardous waste.

14. TRANSPORT INFORMATION

DOT Regulated
UN/ID No UN3264
Proper shipping name Corrosive liquid, acidic, inorganic, n.o.s. (Hydrochloric Acid)
Hazard Class 8
Packing Group II

15. REGULATORY INFORMATION

International Inventories

TSCA	Complies
DSL/NDSL	Complies

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	CAS No	Weight-%	SARA 313 - Threshold Values %
Hydrogen Chloride - 7647-01-0	7647-01-0	10 - 30	1.0

SARA 311/312 Hazard Categories

Acute health hazard	Yes
Chronic Health Hazard	Yes
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Hydrogen Chloride 7647-01-0	5000 lb	-	-	X

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Hydrogen Chloride 7647-01-0	5000 lb	5000 lb	RQ 5000 lb final RQ RQ 2270 kg final RQ

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Hydrogen Chloride 7647-01-0	X	X	X

16. OTHER INFORMATION

NFPA	**Health hazards** 3	**Flammability** 0	**Instability** 0	**Physical and Chemical Properties** -
HMIS	**Health hazards** 3	**Flammability** 0	**Physical hazards** 0	**Personal protection** X

Prepared By Regulatory Department
Issue Date 06-Aug-2014
Revision Date 07-Apr-2015
Revision Note
SDS sections updated 11 15

Disclaimer

The information contained on the Material Safety Data Sheet has been compiled from data considered accurate. This data is believed to be reliable, but it must be pointed out that values for certain properties are known to vary from source to source. PROSOCO, Inc. expressly disclaims any warranty express or implied as well as any liability for any injury or loss arising from the use of this information or the materials described. This data is not to be construed as absolutely complete since additional data may be desirable when particular conditions or circumstances exist. It is the responsibility of the user to determine the best precautions necessary for the safe handling and use of this product for his unique application. This data relates only to the specific material designated and is not to be used in combination with any other material. Many federal and state regulations pertain directly or indirectly to the product's end use and disposal of containers and unused material. It is the purchaser's responsibility to familiarize himself with all applicable regulations.

End of Safety Data Sheet

SAFETY DATA SHEET
PROSOCO, Inc.

Issue Date 02-Sep-2014 **Revision Date** 11-May-2015 **Version** 1.01

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier
Product Name Sure Klean® Vana Trol®

Other means of identification
Product Code 10030
UN/ID No UN1760

Recommended use of the chemical and restrictions on use
Recommended Use Restricted to professional users.
Uses advised against No information available

Details of the supplier of the safety data sheet
Manufacturer Address
PROSOCO, Inc.
3741 Greenway Circle
Lawrence, Kansas 66046
Emergency telephone number
8:00 AM – 5:00 PM CST Monday-Friday 785-865-4200
NON-BUSINESS HOURS (INFOTRAC) 800-535-5053

2. HAZARDS IDENTIFICATION

Classification

Acute toxicity - Inhalation (Gases)	Category 4
Acute toxicity - Inhalation (Dusts/Mists)	Category 2
Skin corrosion/irritation	Category 1 Sub-category B
Serious eye damage/eye irritation	Category 1

Label elements

Emergency Overview

Danger

Hazard statements
Fatal if inhaled
Causes severe skin burns and eye damage



Appearance clear **Physical state** Liquid **Odor** Pungent

Precautionary Statements - Prevention
Use only outdoors or in a well-ventilated area

Do not breathe dust/fume/gas/mist/vapors/spray
Wear respiratory protection
Wash face, hands and any exposed skin thoroughly after handling
Wear protective gloves/protective clothing/eye protection/face protection

Precautionary Statements - Response
Immediately call a POISON CENTER or doctor/physician
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
Immediately call a POISON CENTER or doctor/physician
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
Wash contaminated clothing before reuse
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Call a POISON CENTER or doctor/physician if you feel unwell
Immediately call a POISON CENTER or doctor/physician
IF SWALLOWED: Rinse mouth. DO NOT induce vomiting

Precautionary Statements - Storage
Store in a well-ventilated place. Keep container tightly closed
Store locked up

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)
Other Information

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%	Trade Secret
Water	7732-18-5	60 - 100	*
Hydrogen Chloride	7647-01-0	10 - 30	*
Glycolic Acid	79-14-1	1 - 5	*
Citric acid	77-92-9	1 - 5	*

* The exact percentage (concentration) of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

First aid measures

General advice Immediate medical attention is required.

Eye contact Immediate medical attention is required. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area.

Skin Contact Immediate medical attention is required. Wash off immediately with plenty of water while removing contaminated clothing and shoes. Call a physician.

Inhalation Remove to fresh air. Call a physician or poison control center immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Ingestion Call a physician or poison control center immediately. Do NOT induce vomiting. Rinse mouth. Drink plenty of water. Remove from exposure, lie down. Never give anything by mouth to an unconscious person.

Self-protection of the first aider Use personal protective equipment as required. Avoid contact with skin, eyes or clothing.

Most important symptoms and effects, both acute and delayed

Symptoms The product causes burns of eyes, skin and mucous membranes. Harmful if inhaled. Harmful if swallowed.

Indication of any immediate medical attention and special treatment needed

Note to physicians Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure. Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media Caution: Use of water spray when fighting fire may be inefficient.

Specific hazards arising from the chemical
The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating and toxic gases and vapors. In the event of fire and/or explosion do not breathe fumes.

Protective equipment and precautions for firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Evacuate personnel to safe areas. Use personal protective equipment as required. Avoid contact with skin, eyes or clothing. Keep people away from and upwind of spill/leak.

Environmental precautions

Environmental precautions Do not allow into any sewer, on the ground or into any body of water. Should not be released into the environment. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. See Section 12 for additional ecological information.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers. Clean contaminated surface thoroughly. After cleaning, flush away traces with water.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Use personal protective equipment as required. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation, especially in confined areas. In case of insufficient ventilation, wear suitable respiratory equipment.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Keep in properly labeled containers. Keep out of the reach of children.

Incompatible materials Incompatible with strong acids and bases. Incompatible with oxidizing agents. Metals.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines .

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Hydrogen Chloride 7647-01-0	Ceiling: 2 ppm	(vacated) Ceiling: 5 ppm (vacated) Ceiling: 7 mg/m³ Ceiling: 5 ppm Ceiling: 7 mg/m³	IDLH: 50 ppm Ceiling: 5 ppm Ceiling: 7 mg/m³

NIOSH IDLH Immediately Dangerous to Life or Health

Other Information Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

Appropriate engineering controls

Engineering Controls Showers. Eyewash stations. Ventilation systems. Application equipment, scaffolding, swing stages and support systems must be constructed of acid resistant materials. Brush on or apply at the lowest practical pressure. Do not atomize during application. Beware of wind drift. Proper work practices and planning should be utilized to avoid contact with workers, passersby, and non-masonry surfaces.

Individual protection measures, such as personal protective equipment

Eye/face protection Tight sealing safety goggles. Face protection shield.

Skin and body protection Wear protective gloves and protective clothing.

Respiratory protection If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

General Hygiene Considerations Wash contaminated clothing before reuse. When using do not eat, drink or smoke. Keep away from food, drink and animal feeding stuffs. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Avoid contact with skin, eyes or clothing. Take off all contaminated clothing and wash it before reuse. Wear suitable gloves and eye/face protection.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Liquid		
Appearance	clear	**Odor**	Pungent
Color	amber	**Odor threshold**	No information available

Property	Values	Remarks • Method
pH	0.3	@ 1:6 Dilution
Melting point/freezing point	-30 °C / -22 °F	
Boiling point/boiling range	No information available	
Flash point		Not Applicable
Evaporation rate	No information available	
Flammability (solid, gas)	No information available	
Flammability Limits in Air		

Upper flammability limits	No information available
Lower flammability limit	No information available
Vapor pressure	No information available
Vapor density	No information available
Specific Gravity	1.11
Water solubility	completely soluble
Solubility in other solvents	No information available
Partition coefficient	No information available
Autoignition temperature	No information available
Decomposition temperature	No information available
Kinematic viscosity	No information available
Dynamic viscosity	No information available

10. STABILITY AND REACTIVITY

Reactivity
No data available

Chemical stability
Stable under recommended storage conditions.
Possibility of Hazardous Reactions
None under normal processing.
Conditions to avoid
Exposure to air or moisture over prolonged periods. Strong bases.
Incompatible materials
Incompatible with strong acids and bases. Incompatible with oxidizing agents. Metals.
Hazardous Decomposition Products
Thermal decomposition can lead to release of irritating and toxic gases and vapors.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information Corrosive Harmful by inhalation, in contact with skin and if swallowed

Inhalation Avoid breathing vapors or mists. Harmful by inhalation.

Eye contact Corrosive to the eyes and may cause severe damage including blindness.

Skin Contact Corrosive. Contact causes severe skin irritation and possible burns.

Ingestion Harmful if swallowed. Can burn mouth, throat, and stomach.

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Water 7732-18-5	> 90 mL/kg (Rat)	-	-
Hydrogen Chloride 7647-01-0	= 700 mg/kg (Rat)	> 5010 mg/kg (Rabbit)	= 3124 ppm (Rat) 1 h
Glycolic Acid 79-14-1	= 1950 mg/kg (Rat)	-	= 7.7 mg/L (Rat) 4 h
Citric acid 77-92-9	= 3000 mg/kg (Rat)	-	-

Information on toxicological effects

Symptoms The product causes burns of eyes, skin and mucous membranes. Harmful by inhalation and if swallowed.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization No information available.
Germ cell mutagenicity No information available.
Carcinogenicity This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.
Reproductive toxicity No information available.
STOT - single exposure No information available.
STOT - repeated exposure No information available.
Chronic toxicity Chronic exposure to corrosive fumes/gases may cause erosion of the teeth followed by jaw necrosis. Bronchial irritation with chronic cough and frequent attacks of pneumonia are common. Gastrointestinal disturbances may also be seen. Avoid repeated exposure. Possible risk of irreversible effects.
Target Organ Effects Eyes, Respiratory system, Skin.
Aspiration hazard Risk of serious damage to the lungs (by aspiration).

Numerical measures of toxicity - Product Information

Unknown Acute Toxicity
The following values are calculated based on chapter 3.1 of the GHS document .
ATEmix (oral) 3523 mg/kg
ATEmix (dermal) 28180 mg/kg
ATEmix (inhalation-gas) 8786 mg/l
ATEmix (inhalation-dust/mist) 0.3 mg/l

12. ECOLOGICAL INFORMATION

Ecotoxicity

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Hydrogen Chloride 7647-01-0	-	282: 96 h Gambusia affinis mg/L LC50 static	-	-
Glycolic Acid 79-14-1	-	5000: 96 h Brachydanio rerio mg/L LC50 static	-	-
Citric acid 77-92-9	-	1516: 96 h Lepomis macrochirus mg/L LC50 static	-	120: 72 h Daphnia magna mg/L EC50

Persistence and degradability
No information available.

Bioaccumulation
No information available.

Chemical Name	Partition coefficient
Glycolic Acid 79-14-1	-1.11
Citric acid 77-92-9	-1.72

Other adverse effects No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal of wastes Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated packaging Do not reuse container.

US EPA Waste Number D002

This product contains one or more substances that are listed with the State of California as a hazardous waste.

14. TRANSPORT INFORMATION

DOT Regulated
- **UN/ID No** UN1760
- **Proper shipping name** Corrosive liquid, n.o.s. (Hydrochloric and Hydroxyacetic Acid)
- **Hazard Class** 8
- **Packing Group** II

15. REGULATORY INFORMATION

International Inventories

TSCA Complies
DSL/NDSL Complies

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	CAS No	Weight-%	SARA 313 - Threshold Values %
Hydrogen Chloride - 7647-01-0	7647-01-0	10 - 30	1.0

SARA 311/312 Hazard Categories
- **Acute health hazard** Yes
- **Chronic Health Hazard** Yes
- **Fire hazard** No
- **Sudden release of pressure hazard** No
- **Reactive Hazard** No

CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Hydrogen Chloride 7647-01-0	5000 lb	-	-	X

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)

Hydrogen Chloride 7647-01-0	5000 lb	5000 lb	RQ 5000 lb final RQ RQ 2270 kg final RQ

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Hydrogen Chloride 7647-01-0	X	X	X
Sulfuric Acid 7664-93-9	X	X	X

16. OTHER INFORMATION

NFPA	**Health hazards** 3	**Flammability** 0	**Instability** 0	**Physical and Chemical Properties** -
HMIS	**Health hazards** 3	**Flammability** 0	**Physical hazards** 0	**Personal protection** X

Prepared By Regulatory Department
Issue Date 02-Sep-2014
Revision Date 11-May-2015
Revision Note
SDS sections updated 2 8 15

Disclaimer

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End of Safety Data Sheet

UNLEADED GASOLINE (ALL GRADES)
MATERIAL SAFETY DATA SHEET

Petrocom Energy Group, LLC
1330 Post Oak Blvd., Suite 2350
Houston, Texas 77056
Phone: 713-418-3000
Fax: 713-418-3001

Revision Date: 03/05/2008

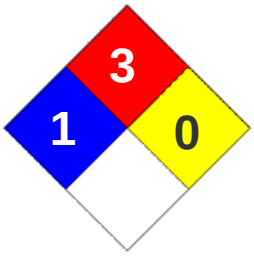
Section 1: Product Identification

Name: Unleaded Gasoline
Synonyms: Regular/Midgrade/Premium Gasoline, Motor Fuel, Reformulated Gasoline, RFG, Conventional Gasoline.
CAS No.: 86290-81-5
MSDS No.: PEG-UNL
Use: Motor fuel

Section 2: Product Composition

Component	CAS Number	Amount (%)
Gasoline	86290-81-5	0 – 100
Benzene	71-43-2	0 – 5
Toluene	108-88-3	0 – 30
Xylene (all isomers)	1330-20-7	0 – 25
Hexane (other isomers)	Mixture	5 – 25
n-Hexane	110-54-3	0 – 3
Cyclohexane	110-82-7	0 – 3
Octanes (all isomers)	Mixture	0 – 20
Heptane (all isomers)	142-82-5	0 – 15
Ethanol	64-17-5	0 – 10
Pentanes (all isomers)	Mixture	0 – 20
Trimethylbenzenes (all isomers)	95-63-6	0 – 5
Ethylbenzene	100-41-4	0 – 5
Cumene	98-82-8	0 – 5
Methyl Tertiary Butyl Ether (MTBE)	1634-04-4	0 – 16
Tertiary Amyl Methyl Ether (TAME)	994-05-8	0 – 6

Section 3: Hazards Identification

Emergency Overview	Hazard Rankings
DANGER! Extremely Flammable liquid and vapor Harmful if swallowed Skin Irritant May cause eye and respiratory irritation Cancer Hazard – Contains material which can cause cancer	**NFPA** 

Physical form: Liquid
Appearance: Clear to amber
Odor: Strong, Gasoline

Potential Health Effects

Eyes: Contact with eyes may cause irritation, redness, tearing, stinging, watering and blurred vision.

Skin: Contact with skin may cause irritation, itching, redness and skin damage. Prolonged or repeated contact may cause drying and cracking of the skin, and may also cause dermatitis and inflammation. (See also section 11).

Inhalation: Breathing high concentration can be harmful. Throat and lung irritation may occur. Central nervous system effects including nausea, euphoria, dizziness, headache, fatigue, drowsiness or unconsciousness may occur due to long term or high concentration exposure to vapors.

Ingestion: Toxic if swallowed. This product may cause nausea, vomiting, dizziness, drowsiness, diarrhea if swallowed. Central nervous system effects may be caused. Swallowing this product can result in severe lung damage and/or death.

Signs / Symptoms: When overexposed to this product effects such as nausea, vomiting, blurred vision, respiratory failure, central nervous system depression, unconsciousness, tremor, death may occur.

See toxicological Information (section 11)

Section 4: First Aid Measures

Eye contact: Flush eyes immediately with fresh, cool water for at least 15 minutes. If irritation or redness or any symptoms persist, seek medical attention.

Skin contact: Remove contaminated clothes and shoes. Flush affected area with large amounts of water. If skin surface is damaged, apply a clean dressing and seek medical attention. If skin surface is not damaged, wash affected area thoroughly with soap and water. If irritation or redness develops, seek medical attention.

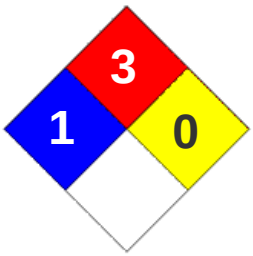
Inhalation (Breathing): If inhaled, immediately move person to fresh air. If there is difficulty breathing, give oxygen. If not breathing, immediately give artificial respiration. Seek medical attention.

Ingestion (Swallowing): This product may be harmful or fatal if swallowed. This product may cause nausea, vomiting, diarrhea and restlessness. Do not induce vomiting. Do not give anything by mouth because this material can enter the lungs and cause severe lung damage. If victim is unconscious or drowsy, place on the left side with the head down. Seek immediate medical attention.

Notes to Physician: This material sensitizes the heart to the effects of sympathomimetic amines. Epinephrine and other sympathomimetic drugs may initiate cardiac arrhythmias in individuals exposed to this material.
Inhalation overexposure can produce toxic effects. Monitor respiratory distress. If difficulty in breathing evaluate upper respiratory tract inflammation, bronchitis and pneumonitis. Administer supplemental oxygen as required.
If ingested, this material presents a significant aspiration and chemical pneumonitis hazard. Cinsuder activated charcoal and/or gastric lavage. If patient is obtunded, protect the airway by cuffed endotracheal intubtion or by placement of the body in a Trendelenburg and left lateral decubitus position.

Section 5: Fire Fighting Measures

NFPA Hazard Class: Health = 1 ; Flammability = 3 ; Instability = 0
(0 – Minimal ; 1 – Slight ; 2 – Moderate ; 3 – Serious ; 4 – Severe)



Auto – ignition temperature : >260 ˚C (500 ˚F)

Flash point **:** Closed cup: **-**43 ˚C (-45 ˚F)

Flammable limits **:** Lower: approximately 1.4%
Upper: approximately 7.6%

Products of combustion **:** Carbon monoxide, carbon dioxide, nitrogen and sulfur oxides, smoke, fumes, unburned hydrocarbons and other products of incomplete combustion.

Special properties **:** Flammable liquid! This material can be ignited by heat, sparks, flames or other sources of ignition. Vapors may travel long distances to a source where they can ignite and flash back, or explode. A mixture of vapor and air can create an explosion hazard in confined spaces. If container is not properly cooled, it can rupture n the heat of a fire.

Extinguishing media **:** Use of dry chemical, carbon dioxide, or foam is recommended to extinguish fire. Water spray is recommended to cool or protect exposed materials or structures. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces. Water may not extinguish the fire, unless it is used by experienced fire fighters and under favorable conditions.

Protective Equipment for Fire Fighters **:** Fire fighters should wear appropriate protective equipment and self contained breathing apparatus (SCBA) with a full face piece operated in positive pressure mode.

Section 6: Accidental Release Measures

Personal precautions: This material is extremely flammable. Eliminate all ignition sources. Keep all hot metal surfaces away from spill/release. All equipment used when handling this material must be grounded.

Spill precautions: Stay upwind and away from spill. Notify persons down wind of the spill, isolate spill area and keep unauthorized personnel out. If it can be done with minimal risk, try to stop spill. Always wear protective equipment, including respiratory protection. Contact emergency personnel.

Environmental precautions: Prevent spilled material from entering sewers, drains, soil, and natural waterways. Use foam or spills to minimize vapors (section 5). Spilled material may be absorbed into an appropriate absorbent material.

Methods for cleaning up: Notify fire authorities and appropriate federal, state and local agencies. Immediate cleanup is recommended.

Section 7: Handling and Storage

Handling: Flammable liquid and vapor. To be used only as a motor fuel. Avoid inhalation of vapors and contact with skin. Wash hands thoroughly after handling this material. Use in a well ventilated area away from all ignition sources. Use product with caution around heat, sparks, static electricity and open flames. Static electricity may ignite vapors and cause fire.

Empty containers retain residue and may be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks or other ignition sources. The may explode and cause injury and/or death. Empty drums should be completely drained, properly bunged, and returned promptly to a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations.

Storage: Store in approved containers only. Keep in tightly closed containers in cool, dry, well ventilated areas. Keep isolated away from heat, sources of ignition and hot metal surfaces.

Section 8: Exposure Controls / Personal Protection

Engineering controls: Provide ventilation or other engineering controls to keep the airborne concentrations of vapor or mists below their occupational exposure limits. Eyewash stations and safety showers should be located near the work-station.

Personal Protection

Eye Protection: Keep away from eyes. Safety glasses complying with approved standards should be worn. Chemical type goggles should be worn.

Skin Protection: Keep away from skin. Skin protection should be worn. Chemical resistant, impervious gloves should be worn. Always follow good personal hygiene practices after handling the material.

Respiratory Protection: Approved respiratory equipment must be used if a risk assessment indicates it is necessary. If workplace exposure limits for product or components are exceeded, NIOSH approved equipment should be worn.

General Protection: Use this material in well ventilated areas. Ventilation equipment should be explosion proof also.

Component	Applicable Workplace Exposure Limits
Gasoline	ACGIH – TWA: 300 ppm (8 hours) STEL: 500 ppm (15 minutes)
Benzene	ACGIH – TWA: 0.5 ppm (8 hours) STEL: 2.5 ppm (15 minutes) OSHA – TWA: 1 ppm (8 hours) STEL: 5 ppm (15 minutes)
Toluene	ACGIH – TWA: 20 ppm (8 hours) OSHA – TWA: 200 ppm (8 hours) CEIL: 300 ppm PEAK: 500 ppm (10 minutes)
Xylene (all isomers)	ACGIH – TWA: 100 ppm (8 hours) STEL: 150 ppm (15 minutes) OSHA – TWA: 100 ppm (8 hours)
Hexane (other isomers)	ACGIH – TWA: 500 ppm (8 hours) STEL: 1000 ppm (15 minutes)
n-Hexane	ACGIH – TWA: 50 ppm (8 hours) OSHA – TWA: 500 ppm (8 hours)
Cyclohexane	ACGIH – TWA: 100 ppm (8 hours) OSHA – TWA: 300 ppm (8 hours)
Octanes (all isomers)	ACGIH – TWA: 300 ppm (8 hours) OSHA – TWA: 500 ppm (8 hours)
Heptane (all isomers)	ACGIH – TWA: 400 ppm (8 hours) STEL: 5000 ppm (15 minutes) OSHA – TWA: 500 ppm (8 hours)
Ethanol	ACGIH – TWA: 1000 ppm (8 hours) OSHA – TWA: 1000 ppm (8 hours)
Pentanes (all isomers)	ACGIH – TWA: 600 ppm (8 hours) OSHA – TWA: 1000 ppm (8 hours)
Trimethylbenzenes (all isomers)	ACGIH – TWA: 25 ppm (8 hours)
Ethylbenzene	ACGIH – TWA: 100 ppm (8 hours) STEL: 125 ppm (15 minutes) OSHA – TWA: 100 ppm (8 hours)
Cumene	ACGIH – TWA: 50 ppm (8 hours) OSHA – TWA: 50 ppm (8 hours)
Methyl Tertiary Butyl Ether (MTBE)	ACGIH – TWA: 50 ppm (8 hours)
Tertiary Amyl Methyl Ether (TAME)	ACGIH – TWA: 20 ppm (8 hours)

Section 9: Physical and Chemical Properties

Physical State:	Liquid.
Color:	Transparent, clear to amber liquid.
Odor:	Strong. Characteristic gasoline odor.
pH:	Not applicable
Boiling Point:	>26 ˚C (>78 ˚F)
Melting Point:	Not applicable.
Specific gravity:	0.66 to 0.75 (Water = 1)
Vapor density:	3 to 4 (Air = 1)
Vapor pressure:	220-450 mm Hg at 20˚C (68˚F) / 6-15 Reid-psia at 37.8˚C (100˚F)
Volatility:	720 – 770 g/l VOC (w/v)
Viscosity (at 40 ˚C):	< 1
Flash Point:	< -45 ˚F / < 43˚C
Bulk Density:	6.0 – 6.4 lbs/gal
Solubility in water:	Negligible

Section 10: Stability and Reactivity

Stability:	Stable. Extremely flammable liquid and vapor. Vapor can cause fire.
Conditions to avoid:	Keep away from heat, flame and all other possible sources of ignition.
Materials to avoid:	Keep away from strong oxidizing agents such as acids, chlorine, hydrogen peroxide and oxygen.
Hazardous decomposition products:	Please refer to the combustion products identified in Section 5 of this MSDS.
Hazardous Polymerization:	Not expected to occur.

Section 11: Toxicological Information

Toxicology Information

Oral toxicity:	Almost non-toxic. LD 50: > 2000 mg/kg (species: rats)
Dermal toxicity:	Almost non-toxic. LD 50: > 2000 mg/kg (species: rabbits)
Inhalation toxicity:	Almost non-toxic. LD 50: > 5 mg/l (species: rats)
Eye irritation:	Almost non-irritating. Draize score: > 6 and < 15 (species: rabbits)
Skin irritation:	Irritant. Primary irritation index: > 3 and < 5 (species: rabbits)
Other data:	Inhalation of high concentrations of vapors or mists may cause respiratory system irritation and damage. It may also result in the damage and depression of the central nervous system and may cause death. Prolonged contact with the material may cause severe skin irritation.
Subchronic toxicity:	Dermal studies resulted in significant irritation but not systematic toxicity (species: rabbits). Inhalation exposures (90 day, approximately 1500 ppm vapor) produced light hydrocarbon nephropathy but no significant systemic toxicity (species: rats).
Neurotoxicity:	Repeated and prolonged exposures to high concentrations of vapor has been reported to result in central nervous system damage and eventually, death. In a study in which ten human volunteers were exposed for 30 minutes to approximately 200, 500 or 1000 ppm concentrations of gasoline vapor, irritation of the eyes was the only significant effect observed, based on both subjective and objective assessments. However, no persistent neurotoxic effects were observed in subchronic inhalation studies of gasoline.
Reproductive toxicity:	An inhalation study with rats exposed to 0, 400 and 1600 ppm of wholly vaporized unleaded gasoline, 6 hours per day on day 6 through 16 of gestation, showed no teratogenic effects nor indication of toxicity to either the mother or the fetus. Another inhalation study in rats exposed to 3000, 6000, or 9000 ppm of gasoline vapor, 6 hours per day on day 6 through 20 of gestation, also showed no teratogenic effects nor indications of toxicity to either the mother or the fetus.
Chronic toxicity:	A lifetime mouse skin painting study of unleaded gasoline applied at 50 microliters, three time weekly, resulted in some severe skin irritation and changes, but no statistically significant increase in skin cancer or cancer to any other organ. Lifetime inhalation of wholly vaporized unleaded gasoline over 2000 ppm has caused increased liver tumors in female mice and increased kidney tumors in male rats. The EPA has concluded that mechanism by which wholly vaporzied unleaded gasoline causes kidney damage is unque to the male rat. The effects in that species (kidney damage and cancer) should not be used in human risk assessment.

Other toxic effects on humans

Extremely hazardous in case of ingestion.
Very hazardous in case of eye contact.
Hazardous in case of skin contact.
Slightly hazardous in case of inhalation.

Carcinogenic effects:

Contains material that may cause cancer depending on the level and duration of exposure.

Target organs:

Contains material that may cause damage to humans organs such as (but not limited to) blood, kidneys, lungs, liver, eye, skin, nervous system and upper respiratory tract.

Section 12: Ecological Information

Ecotoxicity:

This material may be toxic to aquatic organisms such as algae and daphnia. It has also shown to be toxic to fish.

Environmental fate:

The material is expected to be readily biodegradable. When released into the environment, some of the constituents of gasoline will volatilize and be photo degraded in the atmosphere. Following spillage, the more volatile components of gasoline will be rapidly lost, with concurrent dissolution of these and other constituents into the water. Factors such as local environmental conditions, photo-oxidation, biodegradation and adsorption onto suspended sediments, can contribute to the weathering of spilled gasoline.

Section 13: Disposal Considerations

Waste disposal:

Avoid disposal of spilled material and runoff and contact with soil, waterways, drains and sewers. Disposal of this product and any of its by products should always comply with the requirements of environmental protection and waste disposal legislation and any local authority requirements.
This material would likely be identified as a federally regulated RCRA hazardous waste. See sections 7 and 8 for further information on handling, storage and personal protection. See section 9 for the material's physical and chemical properties.

Section 14: Transportation Information

This material is U.S Department of Transportation (DOT) regulated material.

Shipping name: Gasoline, 3, UN 1203, PG II
Gasohol, 3, NA 1203, PG II (for gasoline blended with less than 20% ethanol).

Hazard class: 3 DOT Class: Flammable liquid

Packing Group: II

UN / NA Number: UN1203 / NA1203

Emergency Response Code: 128

Label:



Section 15: Regulatory Information

TSCA Inventory: This product and/or its components are listed on the Toxic Substances Control Act (TSCA)

SARA 302 / 304: Emergency planning and notification The Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires facilities subject to Subparts 302 and 304 to submit emergency planning and notification information based on Threshold Planning Quantities (TPQs) and Reportable Quantities (RQs) for “Extremely Hazardous Substances” listed in 40 CFR 302.4 and CFR 355. No components were identified.

SARA 311 / 312: Hazard identification SARA Title III requires facilities subject to this subpart to submit aggregate information on chemicals by “Hazard Category” as defined in 40 CFR 370.2. This material would be classified under: Fire, Acute (immediate) Health Hazard, Chronic (Delayed) Health Hazard.

CERCLA / SARA 313: Toxic and chemical notification and release reporting

This material contains the following chemicals subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR 372

Component	CAS Number	Amount (%)
Benzene	71-43-2	0 – 5
Toluene	108-88-3	0 – 30
Xylene (o, m, p isomers)	1330-20-7	0 – 25
n-Hexane	110-54-3	0 – 3
Cyclohexane	110-82-7	0 – 3
1, 2, 4 Trimethylbenzenes	95-63-6	0 – 5
Ethylbenzene	100-41-4	0 – 5
Cumene	98-82-8	0 – 5
Methyl Tertiary Butyl Ether (MTBE)	1634-04-4	0 – 16

California Proposition 65: This material may contain detectable quantities of the following chemicals known to the State of California to cause cancer, birth defects or other reproductive harm, and which may be subject to the requirements of California Proposition 65 (CA Health & Safety Code Section 25249.5):
Benzene (CAS NO. 71-43-3)
Toluene (CAS No. 108-88-3)
Ethylbenzene (CAS No. 100-41-4)
Naphthalene (CAS No. 91-20-3)

Canadian Regulations: WHMIS Hazard Class: B2 – Flammable Liquids
D2A – Very Toxic Material

Section 16: Other Information

Issue date: March 5, 2008
Previous issue date: No previous date
Version: 1
MSDS Code: PEG-UNL

Legend:
ACGIH = American Conference of Governmental Industrial Hygienists
CAS = Chemical Abstracts Service Registry
CEIL = Ceiling Limit
CERCLA = The Comprehensive Environmental Response, Compensation and Liability Act
EPA = Environmental Protection Agency
NFPA = National Fire Protection Association
OSHA = Occupational Safety and Health Administration
SARA = Superfund Amendments and Reauthorization Act
STEL = Short Term Exposure Limit (15 minutes)
TWA = Time Weighted Average (8 hours)
WHMIS = Worker Hazardous Materials Information System (Canada)

Disclaimer:
The information presented in this Material Safety Data Sheet (MSDS) d on data believed to be accurate as of the issuance date of this MSDS. No warranty is expressed or implied for the accuracy or completeness of the above provided information. Petrocom Energy Group, LLC does not assume any liability for any damage or injury arising out of product use by others. The end user of the product has the responsibility for evaluating the accuracy of the data, and determining the safety, toxicity and suitability of the product under any conditions.

1. IDENTIFICATION

Product Identity / Trade Name: Vitrified Grinding Wheels, Including Surface Grinding Wheels (Type 1) and Mounted Points.

Product Use: Abrasive materials used for cutting and grinding of metals, concrete, masonry and building materials.
Restriction on Use: Use only as directed

Manufacturer: United Abrasives, Inc.
185 Boston Post Road
North Windham, CT 06256

Internet: www.unitedabrasives.com

Information Phone: (860) 456-7131 **Emergency Phone**: (860) 456-7131

Date of Preparation: March 31, 2015

2. HAZARD(S) IDENTIFICATION

Classification: Not classified as hazardous as defined by the GHS and OSHA 29 CFR 1910.1200.

Label Elements: None Required.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical name	CAS No.	Concentration
Aluminum Oxide	1344-28-1	0-100
and/or Silicon Carbide	409-21-2	0-100

The specific identity and/or exact percentage has been withheld as a trade secret.

4. FIRST-AID MEASURES

Ingestion: If grinding dust is swallowed, seek medical attention.
Inhalation: If overexposed to grinding dust, remove victim to fresh air and get medical attention.
Eye Contact: Flush eyes thoroughly with water, holding open eyelids. Get medical attention if irritation persists. Obtain immediate medical attention for foreign body in the eye.
Skin Contact: Wash dust from skin with soap and water. Launder contaminated clothing before reuse.

Most important symptoms/effects, acute and delayed: Eye and skin contact with grinding dust may cause mechanical irritation.

Indication of immediate medical attention and special treatment, if necessary: Immediate medical attention is generally not required.

5. FIRE-FIGHTING MEASURES

Suitable (and unsuitable) extinguishing media: Use any media that is appropriate for the surrounding fire.

Specific hazards arising from the chemical: This product is not combustible, however, consideration must be given to the potential fire or explosion hazards from the base material being processed. Many materials create flammable or explosive dusts or turnings when machined or ground.

Special protective equipment and precautions for fire-fighters: Firefighters should wear full emergency equipment and NIOSH approved positive pressure self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment, and emergency procedures: Wear appropriate respirator and protective clothing as needed to avoid eye contact and inhalation of dust.

Environmental precautions: Avoid release into the environmental. Report releases as required by local, state and federal authorities.

Methods and materials for containment and cleaning up: Pick up, sweep up or vacuum and place in a container for disposal. Minimize generation of dust.

7. HANDLING AND STORAGE

Precautions for safe handling: Avoid breathing dust. Use with adequate ventilation. Avoid eye and skin contact with grinding dust. Wear suitable gloves, eye protection and appropriate protective clothing according to the operation. Wash thoroughly after handling. Consider potential exposure to components of the base materials or coatings being ground. Refer to OSHA's substance specific standards for additional work practice requirements where applicable.

Methods and materials for containment and cleaning up: Pick up, sweep up or vacuum and place in a container for disposal. Minimize generation of dust.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure guidelines:

Aluminum Oxide	5 mg/m3 ACGIH TLV (respirable fraction) (as Al metal) 15 mg/m3 TWA OSHA PEL (total dust) 5 mg/m3 TWA OSHA PEL (respirable fraction)
Silicon Carbide	3 mg/m3 TWA ACGIH TLV (respirable fraction) 10 mg/m3 TWA ACGIH TLV (inhalable fraction) 15 mg/m3 TWA OSHA PEL (total dust) 5 mg/m3 TWA OSHA PEL (respirable fraction)

Note: Consider also components of base materials and coatings being ground.

Appropriate engineering controls: Use local exhaust or general ventilation as required to minimize exposure to dust and maintain the concentration of contaminants below the exposure limits.

Individual protection measures, such as personal protective equipment:
Respiratory protection: Use NIOSH approved respirator if exposure limits are exceeded or where dust exposures are excessive. Consider the potential for exposure to components of the coatings or base material being ground in selecting proper respiratory protection. Refer to OSHA's specific standards for lead, cadmium, etc. where appropriate. Selection of respiratory protection depends on the contaminant type, form and concentration. Select and use respirators in accordance with OSHA 1910.134 and good industrial hygiene practice.
Skin protection: Cloth or leather gloves recommended.
Eye protection: Safety goggles or face shield over safety glasses with side shields.
Other: Protective clothing as needed to prevent contamination of personal clothing. Hearing protection may be required.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance (physical state, color, etc.): Black, gray, brown, green or reddish colored solid wheel.
Odor: No Odor

Odor threshold: Not applicable	**pH:** Not applicable
Melting point/freezing point: Not applicable	**Boiling Point:** Not applicable
Flash point: Not applicable	**Evaporation rate:** Not applicable
Flammability (solid, gas): Not combustible	
Flammable limits: LEL: Not applicable	**UEL:** Not applicable
Vapor pressure: Not applicable	**Vapor density:**
Relative density: Not applicable	**Solubility(ies):** Not soluble
Partition coefficient: n-octanol/water: Not applicable	**Auto-ignition temperature:** Not applicable
Decomposition temperature: Not applicable	**Viscosity:** Not applicable

10. STABILITY AND REACTIVITY

Reactivity: Not reactive.
Chemical stability: Stable.
Possibility of hazardous reactions: None known.
Conditions to avoid: None known.
Incompatible materials: None known.
Hazardous decomposition products: Dust from grinding could contain ingredients listed in Section 3 and other, potentially more hazardous components of the base material being ground or coatings applied to the base material.

11. TOXICOLOGICAL INFORMATION

Routes of exposure:
Inhalation: Dust may cause respiratory irritation.
Ingestion: None expected under normal use conditions. Swallowing large pieces may cause obstruction of the gastrointestinal tract.
Skin contact: None expected under normal use conditions. Rubbing product across the skin may cause mechanical irritation or abrasions.
Eye contact: Dust may cause eye irritation. Dust particles may cause abrasive injury to the eyes.

Chronic effects from short- and long-term exposure: Long-term overexposure to respirable dust may cause lung damage (fibrosis) with symptoms of coughing, shortness of breath and diminished breathing capacity. Chronic effects may be aggravated by smoking. Prolonged exposure to elevated noise levels during operations may affect hearing. A greater hazard, in most cases, is the exposure to the dust/fumes from the material or paint/coatings being ground. Most of the dust generated during grinding is from the base material being ground and the potential hazard from this exposure must be evaluated.

Numerical measures of toxicity: This product and its components are not acutely toxic.
Aluminum Oxide: LD50 Oral rat >5,000 mg/kg, Inhalation rat LC50 >7.6 mg/L/1 hr
Silicon Carbide: Oral rat LD50 >2000 mg/kg, Dermal rat LD50 >2000 mg/kg

Carcinogenicity: None of the components are listed as a carcinogen or potential carcinogen by OSHA, NTP or IARC.

12. ECOLOGICAL INFORMATION

Ecotoxicity:

Aluminum Oxide: 96 hr LC50 Pimephales promelas 35 mg/L
Silicon Carbide: No data available

Persistence and degradability: Biodegradation is not applicable to inorganic compounds.
Bioaccumulative potential: No data available
Mobility in soil: No data available.
Other adverse effects: No data available.

13. DISPOSAL CONSIDERATIONS

Dispose in accordance with all applicable local, state/provincial and federal regulations. Local regulations may be more stringent than regional and national requirements. It is the responsibility of the waste generator to determine the toxicity and physical characteristics of the material to determine the proper waste identification and disposal in compliance with applicable regulations.

14. TRANSPORT INFORMATION

	UN Number	Proper shipping name	Hazard Class	Packing Group	Environmental Hazard
DOT	None	Not Regulated	None	None	
TDG	None	Not Regulated	None	None	

Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code): Not applicable – product is transported only in packaged form.

Special precautions: None identified.

15. REGULATORY INFORMATION

SARA Section 311/312 Hazard Categories: Not Applicable (manufactured articles)

SARA Section 313: This product contains the following toxic chemicals subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372 (Toxic Chemical Release Reporting): None

California Proposition 65: WARNING! You create dust when you cut, sand, drill or grind materials such as wood, paint, cement, masonry or metal. This dust often contains chemicals known to cause cancer, birth defects or other reproductive harm.

16. OTHER INFORMATION

NFPA Rating: Health = 1 Flammability = 0 Instability = 0
HMIS Rating: Health = 1 Flammability = 0 Physical Hazard =0

Date Previous Revision: 5/23/12
Date This Revision: 3/31/15
Revision Summary:
5/23/12: Section 3 Components; Section 5 Removed Flammable Limits; Section 8 Exposure Limits; Comprehensive Review
3/31/15: Changed all sections. Updated format to GHS.

The preceding information is believed to be correct and current as of the date of preparation of this Material Safety Data Sheet. Since the use of this information and the conditions of use of this product are not within the control of United Abrasives, Inc., it is the user's obligation to assure safe use of this product.

MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

Material name VOLCLAY WATERSTOPPAGE®

Version # 03

Revision date 29-January-2009

Manufacturer
CETCO
Building Materials Group
2870 Forbs Avenue
Hoffman Estates, IL 60192 US
safety.data@amcol.com
http://www.cetco.com/
General Information (800) 527-9948
CHEMTREC® (800) 424-9300

2. Hazards Identification

Emergency overview Material can be slippery when wet

Potential health effects

Routes of exposure Inhalation. Eye contact.

Eyes Dust or powder may irritate eye tissue.

Skin Non-irritating to the skin.

Inhalation Repeated or prolonged inhalation may cause toxic effects. For additional information on inhalation hazards, see Section 11 of this safety data sheet.

Ingestion No significant adverse effects are expected upon ingestion of the product.

Target organs Lungs.

Chronic effects This product has the potential for generation of respirable dust during handling and use. Dust may contain respirable crystalline silica. Overexposure to dust may result in pneumocononiosis, a respiratory disease caused by inhalation of mineral dust, which can lead to fibrotic changes to the lung tissue, or silicosis, a respiratory disease caused by inhalation of silica dust, which can lead to inflammation and fibrosis of the lung tissue. Occupational exposure to nuisance dust (total and respirable) and respirable crystalline silica should be monitored and controlled.

3. Composition / Information on Ingredients

Non-hazardous components	CAS #	Percent
BENTONITE	1302-78-9	90 - 100

Composition comments Bentonite contains naturally occurring crystalline silica (not listed in Annex I of Directive 67/548/EEC) in quantities less than%.

4. First Aid Measures

First aid procedures

Eye contact Flush eyes immediately with large amounts of water. Get medical attention if irritation develops or persists.

Skin contact No special measures required. Get medical attention if irritation develops or persists.

Inhalation If symptoms are experienced, remove source of contamination or move victim to fresh air. If the affected person is not breathing, apply artificial respiration. If breathing is difficult, give oxygen. Call a physician if symptoms develop or persist.

Ingestion No special measures required. If ingestion of a large amount does occur, seek medical attention.

Notes to physician Provide general supportive measures and treat symptomatically.

5. Fire Fighting Measures

Flammable properties None known.

Extinguishing media

Suitable extinguishing media Use any media suitable for the surrounding fires. Dry chemical, CO2, water spray or regular foam.

Protection of firefighters

Protective equipment and precautions for firefighters	Material can be slippery when wet
Hazardous combustion products	None known.

6. Accidental Release Measures

Personal precautions	Material can be slippery when wet. Wear a dust mask if dust is generated above exposure limits.
Environmental precautions	No special environmental precautions required.
Methods for containment	None necessary.
Methods for cleaning up	Avoid the generation of dusts during clean-up. Collect dust or particulates using a vacuum cleaner with a HEPA filter. Reduce airborne dust and prevent scattering by moistening with water.

7. Handling and Storage

Handling	Keep formation of airborne dusts to a minimum. Provide appropriate exhaust ventilation at places where dust is formed. In case of insufficient ventilation, wear suitable respiratory equipment.
Storage	Guard against dust accumulation of this material. No special storage conditions required. No special restrictions on storage with other products.

8. Exposure Controls / Personal Protection

Occupational exposure limits

ACGIH

Constituents	Type	Value	Form
INERT OR NUISANCE DUST (SEQ250)	TWA	10 mg/m3	Inhalable particles.
		3 mg/m3	Respirable particles.
QUARTZ (14808-60-7)	TWA	0.025 mg/m3	Respirable fraction.

U.S. - OSHA

Constituents	Type	Value	Form
INERT OR NUISANCE DUST (SEQ250)	PEL	15 mg/m3	Total dust.
		5 mg/m3	Respirable fraction.
	TWA	5 mg/m3	Respirable fraction.
		50 mppcf	Total dust.
		15 mppcf	Respirable fraction.
		15 mg/m3	Total dust.
QUARTZ (14808-60-7)	TWA	2.4 mppcf	Respirable.
		0.3 mg/m3	Total dust.
		0.1 mg/m3	Respirable.
		0.1 mg/m3	Respirable dust.

Exposure guidelines	Occupational exposure to nuisance dust (total and respirable) and respirable crystalline silica should be monitored and controlled.
Engineering controls	If material is ground, cut, or used in any operation which may generate dusts, use appropriate local exhaust ventilation to keep exposures below the recommended exposure limits. If engineering measures are not sufficient to maintain concentrations of dust particulates below the OEL, suitable respiratory protection must be worn.

Personal protective equipment

Eye / face protection	Wear dust goggles.
Skin protection	No special protective equipment required.
Respiratory protection	Use a particulate filter respirator for particulate concentrations exceeding the Occupational Exposure Limit.
General hygeine considerations	Eye wash fountain is recommended. Use good industrial hygiene practices in handling this material.

9. Physical & Chemical Properties

Appearance	Not available.

Color	Various.
Odor	None.
Odor threshold	Not available.
Physical state	Solid.
Form	Pellets. Chips. Tablet.
pH	7 - 9
Melting point	Not available.
Freezing point	Not available.
Boiling point	Not available.
Flash point	Not flammable
Evaporation rate	Not available.
Flammability	Not available.
Flammability limits in air, upper, % by volume	Not explosive
Flammability limits in air, lower, % by volume	Not explosive
Vapor pressure	Not available.
Vapor density	Not available.
Specific gravity	2.5503 estimated
Relative density	Not available.
Solubility (water)	Negligible
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
VOC	0 % estimated
Percent volatile	0 % estimated

10. Chemical Stability & Reactivity Information

Chemical stability	Stable at normal conditions.
Conditions to avoid	None known.
Incompatible materials	None known.
Hazardous decomposition products	None known.
Possibility of hazardous reactions	Will not occur.

11. Toxicological Information

Chronic effects

In 1997, IARC (the International Agency for Research on Cancer) concluded that crystalline silica inhaled from occupational sources can cause lung cancer in humans. However in making the overall evaluation, IARC noted that "carcinogenicity was not detected in all industrial circumstances studied. Carcinogenicity may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity or distribution of its polymorphs." (IARC Monographs on the evaluation of the carcinogenic risks of chemicals to humans, Silica, silicates dust and organic fibres, 1997, Vol. 68, IARC, Lyon, France.)

In June 2003, SCOEL (the EU Scientific Committee on Occupational Exposure Limits) concluded that the main effect in humans of the inhalation of respirable crystalline silica dust is silicosis. "There is sufficient information to conclude that the relative risk of lung cancer is increased in persons with silicosis (and, apparently, not in employees without silicosis exposed to silica dust in quarries and in the ceramic industry). Therefore, preventing the onset of silicosis will also reduce the cancer risk..." (SCOEL SUM Doc 94-final, June 2003)

According to the current state of the art, worker protection against silicosis can be consistently assured by respecting the existing regulatory occupational exposure limits. Occupational exposure to nuisance dust (total and respirable) and respirable crystalline silica should be monitored and controlled.

Carcinogenicity

IARC Monographs on Occupational Exposures to Chemical Agents: Overall evaluation

QUARTZ (14808-60-7)	1 Human carcinogen.

US ACGIH Threshold Limit Values: A2 carcinogen

QUARTZ (14808-60-7)	Group A2 Suspected human carcinogen.

US NTP Report on Carcinogens: Known carcinogen

QUARTZ (14808-60-7)	Known carcinogen.

12. Ecological Information

Ecotoxicological data

Product	Test Results
VOLCLAY WATERSTOPPAGE®	LC50 Fish: 19000 mg/l 96.00 Hours estimated
Components	**Test Results**
BENTONITE (1302-78-9)	LC50 Rainbow trout,donaldson trout (Oncorhynchus mykiss): 19000 mg/l 96.00 Hours

* Estimates for product may be based on additional component data not shown.

Ecotoxicity This material is not expected to be harmful to aquatic life.

Environmental effects Based on the physical properties of this product, significant environmental persistence and bioaccumulation would not be expected.

Persistence and degradability Not available.

13. Disposal Considerations

Disposal instructions Dispose in accordance with all applicable regulations. Material should be recycled if possible.

14. Transport Information

DOT

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

15. Regulatory Information

US federal regulations OSHA Process Safety Standard: This material is not known to be hazardous by the OSHA Highly Hazardous Process Safety Standard, 29 CFR 1910.119.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories	Immediate Hazard - No Delayed Hazard - Yes Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No
Section 302 extremely hazardous substance	No
Section 311 hazardous chemical	Yes

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of New and Existing Chemicals (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

State regulations WARNING: This product contains a chemical known to the State of California to cause cancer.

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

QUARTZ (14808-60-7) Listed.

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

QUARTZ (14808-60-7) Listed: October 1, 1988 Carcinogenic.

US - Pennsylvania RTK - Hazardous Substances: Listed substance

QUARTZ (14808-60-7) Listed.

16. Other Information

Further information This safety datasheet only contains information relating to safety and does not replace any product information or product specification.

Recommended restrictions Workers (and your customers or users in the case of resale) should be informed of the potential presence of respirable dust and respirable crystalline silica as well as their potential hazards. Appropriate training in the proper use and handling of this material should be provided as required under applicable regulations.

HMIS ratings



NFPA ratings Health: 1
Flammability: 0
Instability: 0

Disclaimer	The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The manufacturer expressly does not make any representations, warranties, or guarantees as to its accuracy, reliability or completeness nor assumes any liability, for its use. It is the user's responsibility to verify the suitability and completeness of such information for each particular use. Third party materials: Insofar as materials not manufactured or supplied by this manufacturer are used in conjunction with, or instead of this product, it is the responsibility of the customer to obtain, from the manufacturer or supplier, all technical data and other properties relating to these and other materials and to obtain all necessary information relating to them. No liability can be accepted in respect of the use of this product in conjunction with materials from another supplier. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.
Issue date	29-January-2009
This data sheet contains changes from the previous version in section(s):	Composition / Information on Ingredients: Composition comments Other Information: Disclaimer Other Information: Other information
Other information	CETCO is an AMCOL International company.

MATERIAL SAFETY DATA SHEET

Identity: Water Additive - Part #32-001100 or as included with 32-000130 or 32-000230

Section I

Manufacturer: Sperian Eye & Face Protection, Inc (a Honeywell Company)	**Emergency Telephone:** 1-800-430-5490
Address: 825 East Highway 151	**Information Telephone:** 1-800-543-4842
Platteville, WI 53818	**Date Prepared:** 10/18/12

Section II - Hazardous Ingredients/Identity Information

Hazardous Components (Specific Chemical Identity; Common Name(s))	OSHA PEL	ACGIH TLV	Other limits recommended	% (optional)
Para-Chloroaniline	D.N.A.	500 P.P.M.	N/A	N/A
Chlorhexidine 55-56-1	D.N.A.	N/A	N/A	N/A

Section III - Physical/Chemical Characteristics

Boiling Point: 206.6° F (97° C)	**Specific Gravity (H2 O)=1:** 1.06
Vapor Pressure (mm Hg.): N/A	**Melting Point:** D.N.A. LIQUID
Vapor Density (Air = 1): N/A	**Evaporation Rate (Butyl Acetate = 1):** SAME AS WATER

Solubility in Water: SOLUBLE

Appearance and Odor: ALMOST COLORLESS OR PALE STRAW COLOR.

Section IV - Fire and Explosion Hazard Data

Flash Point (Method Used): 147°F EXTINGUISHED FLAME	**FlammableLimits:**NON-FLAMMABLE	**LEL:** N/A	**UEL:** N/A

Extinguishing Media: FOAM, DRY CHEMICAL, CO2, WATER FOG.

Special Fire Fighting Procedures: MUST WEAR MSHA/NIOSH APPROVED, SELF-CONTAINED BREATHING APPARATUS. COOL FIRE EXPOSED CONTAINERS WITH WATER SPRAY.

Unusual Fire and Explosion Hazards: THERMAL DECOMPOSITION MAY PRODUCE TOXIC FUMES OF AMMONIA, HYDROGEN CHLORIDE AND OXIDES OF CARBON AND NITROGEN.

Section V - Reactivity Data

Stability	**Unstable:** NO **Stable:** YES	**Conditions to Avoid:** STORAGE OVER 98°F (37°C)

Incompatibility (Materials to Avoid): N/A

Hazardous Decomposition or Byproducts: PARA-CHLOROANILINE (P.C.A)

Hazardous Polymerization	**May Occur:** NO **Will NotOccur:** YES	**Conditions to Avoid:** STORAGE IN EXCESS HEAT (104° F) OVER A LONG PERIOD OF TIME.

Section VI - Health Hazard Data

Route(s) of Entry: **Inhalation?** NO **Skin?** NOT ABSORBED **Ingestion?** POSSIBLE

Health Hazards (Acute and Chronic): ORAL LD50: 1.8 g/Kg/(RAT). HAZARDOUS TO MIDDLE EARS WITH PERFORATED EARDRUM.

Carcinogenicity: **NTP?** NONE **TSCA?** YES **IARC Monographs?** NONE **OSHA Regulated?** NO

Signs and Symptoms of Exposure: SKIN AND EYE IRRITANT.

Medical Conditions Generally Aggravated by Exposure: DERMATITIS.

Emergency First Aid Procedures: FLUSH WITH WATER FROM EYES AND EARS.

Section VII - Precautions for Safe Handling and Use

Steps to Be Taken in Case Material is Released or Spilled: FLUSH WITH WATER. IF IRRITATION OCCURS AND PERSISTS, GET MEDICAL ATTENTION.

Waste Disposal Method: FLUSH WITH WATER.

Precautions to Be Taken in Handling and Storing: DO NOT SPILL ON SKIN OR INTO EYES/EARS.

Other Precautions: HANDLE WITH CARE. IN CASE OF EYE CONTACT, IMMEDIATELY FLUSH EYES WITH PLENTY OF WATER. IF IRRITATION PERSISTS, SEEK MEDICAL ATTENTION.

Section VIII - Control Measures

Respiratory Protection: NONE REQUIRED.

Ventilation	**Local Exhaust:** OK	**Special:** N/A
	Mechanical: NO	**Other:** N/A

Protective Gloves: YES	**Eye Protection:** CHEMICAL SAFETY GOGGLES.

Other Protective Clothing: N/A

Work Hygienic Practices: HANDLE WITH CARE.

HOJA DE DATOS DE SEGURIDAD DE MATERIALES

Identidad: Aditivo del agua – Parte N.° 32-001100 o como se incluye en 32-000130 ó 32-000230

Sección I

Fabricante: Sperian Eye & Face Protection, Inc (una compañía de Honeywell)	**Teléfono de emergencia:** 1-800-430-5490
Dirección: 825 East Highway 151 Platteville, WI 53818	**Teléfono para información:** 1-800-543-4842 **Fecha de preparación:** 10/18/12

Sección II - Componentes peligrosos/Información de la identidad

Componentes peligrosos (Identidad de compuestos químicos específicos; nombre(s) común(es))	OSHA PEL	ACGIH TLV	Otros límites recomendados	% (opcional)
Paracloroanilina	Datos no disponibles	500 P.P.M.	No figura	No figura
Clorhexidina 55-56-1	Datos no disponibles	No figura	No figura	No figura

Sección III – Características físicas/químicas

Punto de ebullición: 206,6° F (97° C)	**Peso específico (H2 O)=1:** 1.06
Presión de vapor (mm Hg.): no figura	**Punto de fusión:** LÍQUIDO DATOS NO DISPONIBLES
Presión de vapor (Aire = 1): no figura	**Tasa de evaporación (acetato de butilo = 1):** IGUAL QUE EL AGUA

Solubilidad en agua: SOLUBLE

Aspecto y olor: CASI INCOLORO O COLOR PAJA CLARO.

Sección IV - Datos de peligro de incendio y explosión

Punto de ignición (método utilizado): 147 °F LLAMA EXTINGUIDA	**Límites inflamables:** NO INFLAMABLE	**LEL:** no figura	**UEL:** no figura

Medios de extinción: ESPUMA, QUÍMICO SECO, CO2, NIEBLA DE AGUA.

Procedimientos especiales contra incendios: DEBE UTILIZAR UN APARATO DE RESPIRACIÓN AUTÓNOMA APROBADO POR LA MSHA/NIOSH. ENFRIAR LOS CONTENEDORES EXPUESTOS AL FUEGO CON ROCÍO DE AGUA.

Peligros inusuales de incendio y explosión: LA DESCOMPOSICIÓN TÉRMICA PUEDE PRODUCIR VAPORES TÓXICOS DE AMONÍACO, CLORURO DE HIDRÓGENO Y ÓXIDOS DE CARBONO Y NITRÓGENO.

Sección V – Datos de reactividad

Estabilidad	**Inestable:** NO **Estable:** SÍ	**Condiciones a evitar:** ALMACENAMIENTO SUPERIOR A 98 °F (37 °C)

Incompatibilidad (materiales a evitar): no figura

Descomposición o subproducto peligrosos: PARACLOROANILINA (P.C.A.)

Polimerización peligrosa	**Puede ocurrir:** NO **No ocurre:** SÍ	**Condiciones a evitar:** ALMACENAMIENTO EN CALOR EXCESIVO (104 °F) DURANTE UN LARGO PERÍODO DE TIEMPO.

Sección VI – Datos de peligros para la salud

Vía(s) de ingreso: **¿Inhalación?** NO **¿Piel?** NO ABSORBIDO **¿Ingestión?** POSIBLE

Peligros para la salud (agudos y crónicos): ORAL LD50: 1,8 g/kg/(RATA). PELIGROSO PARA EL OÍDO MEDIO CON TÍMPANO PERFORADO.

Carcinogenicidad: **¿NTP?** NINGUNA **¿TSCA?** SÍ **¿Monografía de la IARC?** NINGUNA **¿Regulado por OSHA?** NO

Signos y síntomas de la exposición: IRRITACIÓN EN LA PIEL Y LOS OJOS.

Afecciones médicas generalmente agravadas por la exposición: DERMATITIS.

Procedimientos de primeros auxilios de emergencia: ENJUAGAR CON AGUA LOS OJOS Y OÍDOS.

Sección VII – Precauciones para el manejo y uso seguros

Pasos a seguir en caso de escape o derrame del material: ENJUAGAR CON AGUA. SI SE PRODUCE IRRITACIÓN PERSISTENTE, CONSULTAR CON UN MÉDICO.

Método de eliminación de desechos: ENJUAGAR CON AGUA.

Precauciones durante la manipulación y almacenamiento: NO DERRAMAR SOBRE LA PIEL O DENTRO DE LOS OJOS U OÍDOS.

Otras precauciones: MANIPULAR CON CUIDADO. EN CASO DE CONTACTO CON LOS OJOS, ENJUAGARLOS INMEDIATAMENTE CON ABUNDANTE AGUA. SI LA IRRITACIÓN PERSISTE, OBTENER ATENCIÓN MÉDICA.

Sección VIII – Medidas de control

Protección respiratoria: NO ES NECESARIA.

Ventilación	**Sistema de escape local:** correcto	**Especial:** no figura
	Mecánica: NO	**Otros:** no figura

Guantes protectores: SÍ	**Protección para los ojos:** GAFAS DE PROTECCIÓN CONTRA PRODUCTOS QUÍMICOS.

Otra ropa protectora: no figura

Prácticas de higiene laboral: MANIPULAR CON CUIDADO.

FICHE TECHNIQUE SANTÉ-SÉCURITÉ

Identification : Additif pour l'eau - Partie N°32-001100 ou comprise avec 32-000130 ou 32-000230

Section I

Fabricant : Sperian Eye & Face Protection, Inc (une compagnie de Honeywell)	**Téléphone d'urgence :** 1-888-212-7233
Adresse: 825 East Highway 151 Platteville, WI 53818	**Information téléphonique :** 1-800-543-4842
	Date : 18/10/12

Section II - Ingrédients dangereux/ Identité

Constituants dangereux (Identité chimique précise; Noms communs)	PEL de l'OSHA	VLE de l'ACGIH	Autres limites recommandées	% (optionnel)
Para-Chloroaniline	SO	500 PPM.	SO	SO
Chlorhexidine 55-56-1	SO	SO	SO	SO

Section III - Caractéristiques physiques et chimiques

Point d'ébullition : 97° C (206,6° F)	**Gravité spécifique (H2 O)=1:** 1,06
Pression de la vapeur (mm Hg) : SO	**Point de fusion :** D.N.A. LIQUIDE
Densité de la vapeur (Air=1) : SO	**Taux d'évaporation (acétate de butyle = 1):** COMME L'EAU

Solubilité dans l'eau SOLUBLE

Apparence et odeur: PRESQUE SANS COULEUR OU PAILLE CLAIR

Section IV - Risques d'incendie et d'explosion

Point d'éclair (méthode utilisée) : FLAMME ÉTEINTE 64° C (147° F)	**Limites d'inflammation :** ININFLAMMABLE	**LIE :** SO	**LES :** SO

Moyens d'extinction appropriés : MOUSSE, PRODUIT CHIMIQUE SEC, CO2, BROUILLARD D'EAU.

Procédures spéciales de lutte contre l'incendie : APPAREIL RESPIRATOIRE AUTONOME APPROUVÉ MSHA/NIOSH OBLIGATOIRE REFROIDIR LES CONTENANTS EXPOSÉS AU FEU AVEC DE L'EAU PULVÉRISÉE.

Risques inhabituels d'incendie ou d'explosion : LA DÉCOMPOSITION THERMIQUE PEUT PRODUIRE DES VAPEURS TOXIQUES D' AMMONIAC, DE CHLORURE D'HYDROGÈNE ET D'OXYDES DE CARBONE ET D'AZOTE.

Section V - Réactivité

Stabilité :	**Instable :** Non **Stable:** OUI	**Conditions à éviter :** ENTREPOSAGE AU-DESSUS DE 37°C (98°F)

Incompatibilité (Matières à éviter): SO

Décomposition dangereuses ou sous-produits: PARA-CHLOROANILINE (P.C.A)

Polymérisation dangereuse	**Peut arriver :** Non **N'arrivera pas:** OUI	**Conditions à éviter :** ENTREPOSAGE À LA CHALEUR EXCESSIVE (40° C/104° F) PENDANT UNE LONGUE PÉRIODE.

Section VI - Risques pour la santé

Voies d'entrée : Inhalation NON **Peau?** PAS D'ABSORPTION **Ingestion?** POSSIBLE

Risques pour la santé (sévères et chroniques): ORAL LD50 : 1,8 g/Kg/(RAT). DANGEREUSES POUR LES OREILLES MOYENNES AVEC LE TYMPAN PERFORÉ

Cancérogénicité : NTP? AUCUN **TSCA?** OUI **Monographies IARC ?** AUCUNE **Règlementé par l'OSHA ?** NON

Signes et symptômes d'exposition : IRRITANT POUR LA PEAU ET LES YEUX.

Troubles médicaux généralement aggravés par exposition : DERMATOSE

Premiers soins : LAVER À GRANDE EAU LES YEUX ET LES OREILLES.

Section VII - Précautions pour la manipulation et l'utilisation en toute sécurité

Mesures à prendre si la matière est rejetée ou déversée : LAVER À GRANDE EAU. EN CAS D'IRRITATION ET SI ELLE PERSISTE, CONSULTER UN MEDECIN.

Élimination : LAVER À GRANDE EAU.

Précautions à prendre la manipulation et l'entreposage : NE PAS EN RENVERSER SUR LA PEAU OU SUR LES YEUX OU LES OREILLES.

Autres précautions: MANIPULER AVEC SOINS. EN CAS DE CONTACT AVECLES YEUX, RINCER IMMÉDIATEMENT LES YEUX À GRANDE EAU. SI L'IRRITATION PERSITE, CONSULTER IMMÉDIATEMENT UN MÉDECIN.

Section VIII - Mesures de contrôle

Protection respiratoire : AUCUN BESOIN.

Ventilation	**Évacuation locale :** OK	**Spécial:** SO
	Mécanique: Non	**Autres** SO

Gants protecteurs : OUI	**Protection des yeux :** LUNETTES ANTI-ÉCLABOUSSURES

Autres vêtements protecteurs : SO

Hygiène au travail : MANIPULER AVEC SOINS.

SAFETY DATA SHEET

1. Identification

Product identifier **WATERSTOP-RX®**

Other means of identification Not available.

Recommended use Not available.

Recommended restrictions Workers (and your customers or users in the case of resale) should be informed of the potential presence of respirable dust and respirable crystalline silica as well as their potential hazards. Appropriate training in the proper use and handling of this material should be provided as required under applicable regulations.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company name CETCO, an MTI Company

Address 2870 Forbs Avenue
Hoffman Estates, IL 60192
United States

Telephone General Information 800 527-9948

Website http://www.cetco.com/

E-mail safety.data@amcol.com

Emergency phone number .

Americas 1.866.519.4752 (US, Canada, Mexico) 1 760 476 3962 Access Code 333562

2. Hazard(s) identification

Physical hazards Not classified.

Health hazards Not classified.

Environmental hazards Not classified.

OSHA defined hazards Not classified.

Label elements

Hazard symbol None.

Signal word None.

Hazard statement The mixture does not meet the criteria for classification.

Prevention Observe good industrial hygiene practices.

Response If exposed or concerned: Get medical advice/attention.

Storage Store away from incompatible materials.

Disposal Dispose of waste and residues in accordance with local authority requirements.

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information Not applicable.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
CARBON BLACK		1333-86-4	< 1
Other components below reportable levels			90 - 100

Impurities

Chemical name	CAS number	%
QUARTZ	14808-60-7	

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

Composition comments Occupational Exposure Limits for impurities are listed in Section 8. This product contains naturally occurring crystalline silica (not listed in Annex I of Directive 67/548/EEC) in quantities less than 6%.

4. First-aid measures

Inhalation Not likely, due to the form of the product. Get medical attention, if needed.

Skin contact No specific first aid measures noted. Wash with water and soap as a precaution.

Eye contact	Flush eyes immediately with large amounts of water. If irritation persists get medical attention.
Ingestion	Not likely, due to the form of the product. If ingestion of a large amount does occur, seek medical attention.
Most important symptoms/effects, acute and delayed	Direct contact with eyes may cause temporary irritation.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Dry chemical, CO2, water spray or regular foam. Carbon dioxide (CO2). Use any media suitable for the surrounding fires.
Unsuitable extinguishing media	None known.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	In the event of fire, wear self-contained breathing apparatus.
Fire-fighting equipment/instructions	In the event of fire, cool tanks with water spray.
Specific methods	Cool containers exposed to flames with water until well after the fire is out. In the event of fire and/or explosion do not breathe fumes.
General fire hazards	Not a fire hazard. No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	For waste disposal, see section 13 of the SDS.
Environmental precautions	None known.

7. Handling and storage

Precautions for safe handling	Avoid prolonged exposure. In case of insufficient ventilation, wear suitable respiratory equipment.
Conditions for safe storage, including any incompatibilities	No special restrictions on storage with other products. Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS). Keep in a cool, well-ventilated place.

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	
CARBON BLACK (CAS 1333-86-4)	PEL	3.5 mg/m3	
Additional components	**Type**	**Value**	**Form**
INERT OR NUISANCE DUSTS (CAS SEQ250)	PEL	5 mg/m3	Respirable fraction.
		15 mg/m3	Total dust.

US. OSHA Table Z-3 (29 CFR 1910.1000)

Additional components	Type	Value	Form
INERT OR NUISANCE DUSTS (CAS SEQ250)	TWA	5 mg/m3	Respirable fraction.
		15 mg/m3	Total dust.
		50 mppcf	Total dust.
		15 mppcf	Respirable fraction.
Impurities	**Type**	**Value**	**Form**
QUARTZ (CAS 14808-60-7)	TWA	0.3 mg/m3	Total dust.

US. OSHA Table Z-3 (29 CFR 1910.1000)

Impurities	Type	Value	Form
		0.1 mg/m3	Respirable.
		2.4 mppcf	Respirable.

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
CARBON BLACK (CAS 1333-86-4)	TWA	3 mg/m3	Inhalable fraction.

Impurities	Type	Value	Form
QUARTZ (CAS 14808-60-7)	TWA	0.025 mg/m3	Respirable fraction.

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
CARBON BLACK (CAS 1333-86-4)	TWA	0.1 mg/m3

Impurities	Type	Value	Form
QUARTZ (CAS 14808-60-7)	TWA	0.05 mg/m3	Respirable dust.

Biological limit values No biological exposure limits noted for the ingredient(s).

Exposure guidelines Some of the components of this product are hazardous in the respirable form. However, because of the physical nature of this product, dust generation is not expected.

Appropriate engineering controls If material is ground, cut, or used in any operation which may generate dusts, use appropriate local exhaust ventilation to keep exposures below the recommended exposure limits. If engineering measures are not sufficient to maintain concentrations of dust particulates below the OEL, suitable respiratory protection must be worn.

Individual protection measures, such as personal protective equipment

Eye/face protection Eye wash fountain is recommended. Wear safety glasses; chemical goggles for fumes which may arise from thermal processing.

Hand protection For prolonged or repeated skin contact use suitable protective gloves.

Other When material is heated, wear gloves to protect against thermal burns.

Respiratory protection When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. When dusts or thermal processing fumes are generated and ventilation is not sufficient to effectively remove them, appropriate NIOSH/MSHA approved respiratory protection must be provided.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations Use good industrial hygiene practices in handling this material.

9. Physical and chemical properties

Appearance

Physical state Solid.

Form Solid.

Color Black. or red

Odor Not available.

Odor threshold Not available.

pH Not available.

Melting point/freezing point Not available.

Initial boiling point and boiling range Not available.

Flash point Not available.

Evaporation rate Not available.

Flammability (solid, gas) Not available.

Upper/lower flammability or explosive limits

Flammability limit - lower (%) Not available.

Flammability limit - upper (%) Not available.

Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	0 hPa estimated
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Density	1.80 g/cm3 estimated
Percent volatile	0 % estimated estimated
Specific gravity	1.8 estimated

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Stable at normal conditions.
Possibility of hazardous reactions	Will not occur.
Conditions to avoid	Contact with incompatible materials.
Incompatible materials	None known.
Hazardous decomposition products	At thermal decomposition temperatures, carbon monoxide and carbon dioxide.

11. Toxicological information

Information on likely routes of exposure

Ingestion	Expected to be a low ingestion hazard.
Inhalation	Prolonged inhalation may be harmful.
Skin contact	Not available.
Eye contact	Direct contact with eyes may cause temporary irritation.
Symptoms related to the physical, chemical and toxicological characteristics	Direct contact with eyes may cause temporary irritation.

Information on toxicological effects

Acute toxicity

Components	**Species**	**Test Results**
CARBON BLACK (CAS 1333-86-4)		
Acute		
Oral		
LD50	Rat	> 8000 mg/kg
Impurities	**Species**	**Test Results**
QUARTZ (CAS 14808-60-7)		
Acute		
Oral		
LD50	Rat	500 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation.
Serious eye damage/eye irritation	Mild irritant to eyes (according to the modified Kay & Calandra criteria) Mild irritant to eyes (according to the modified Kay & Calandra criteria)
Respiratory or skin sensitization	
Respiratory sensitization	Not available.
Skin sensitization	According to the classification criteria of the European Union, the product is not considered as being a skin irritant.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity In June 2003, SCOEL (the EU Scientific Committee on Occupational Exposure Limits) concluded that the main effect in humans of the inhalation of respirable crystalline silica dust is silicosis. "There is sufficient information to conclude that the relative risk of lung cancer is increased in persons with silicosis (and, apparently, not in employees without silicosis exposed to silica dust in quarries and in the ceramic industry). Therefore, preventing the onset of silicosis will also reduce the cancer risk..." (SCOEL SUM Doc 94-final, June 2003) According to the current state of the art, worker protection against silicosis can be consistently assured by respecting the existing regulatory occupational exposure limits. Occupational exposure to respirable dust and respirable crystalline silica should be monitored and controlled. Risk of cancer cannot be excluded with prolonged exposure.

IARC Monographs. Overall Evaluation of Carcinogenicity

CARBON BLACK (CAS 1333-86-4)	2B Possibly carcinogenic to humans.
QUARTZ (CAS 14808-60-7)	1 Carcinogenic to humans.

US. National Toxicology Program (NTP) Report on Carcinogens

QUARTZ (CAS 14808-60-7)	Known To Be Human Carcinogen.

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure Not classified.

Specific target organ toxicity - repeated exposure Not classified.

Aspiration hazard Not available.

Chronic effects In 1997, IARC (the International Agency for Research on Cancer) concluded that crystalline silica inhaled from occupational sources can cause lung cancer in humans. However in making the overall evaluation, IARC noted that "carcinogenicity was not detected in all industrial circumstances studied. Carcinogenicity may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity or distribution of its polymorphs." (IARC Monographs on the evaluation of the carcinogenic risks of chemicals to humans, Silica, silicates dust and organic fibres, 1997, Vol. 68, IARC, Lyon, France.)

In June 2003, SCOEL (the EU Scientific Committee on Occupational Exposure Limits) concluded that the main effect in humans of the inhalation of respirable crystalline silica dust is silicosis. "There is sufficient information to conclude that the relative risk of lung cancer is increased in persons with silicosis (and, apparently, not in employees without silicosis exposed to silica dust in quarries and in the ceramic industry). Therefore, preventing the onset of silicosis will also reduce the cancer risk..." (SCOEL SUM Doc 94-final, June 2003)

According to the current state of the art, worker protection against silicosis can be consistently assured by respecting the existing regulatory occupational exposure limits. Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects. Some of the components of this product are hazardous in the respirable form. However, because of the physical nature of this product, dust generation is not expected.

Occupational exposure to nuisance dust (total and respirable) and respirable crystalline silica should be monitored and controlled.

12. Ecological information

Ecotoxicity No data available for this product. This material is not expected to be harmful to aquatic life.

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential No data available.

Mobility in soil No data available.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Material should be recycled if possible.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not available.

15. Regulatory information

US federal regulations OSHA Process Safety Standard: This material is not known to be hazardous by the OSHA Highly Hazardous Process Safety Standard, 29 CFR 1910.119.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories
Immediate Hazard - No
Delayed Hazard - Yes
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance Yes

SARA 311/312 Hazardous chemical Yes

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

Food and Drug Administration (FDA)
Total food additive
Indirect food additive
GRAS food additive

US state regulations WARNING: This product contains a chemical known to the State of California to cause cancer.

US - Pennsylvania RTK - Hazardous Substances: Listed substance

CARBON BLACK (CAS 1333-86-4)
QUARTZ (CAS 14808-60-7)

US. Massachusetts RTK - Substance List

CARBON BLACK (CAS 1333-86-4)
QUARTZ (CAS 14808-60-7)

US. New Jersey Worker and Community Right-to-Know Act

Not regulated.

US. Rhode Island RTK

Not regulated.

US. California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause cancer.

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

CARBON BLACK (CAS 1333-86-4)	Listed: February 21, 2003
QUARTZ (CAS 14808-60-7)	Listed: October 1, 1988

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 13-August-2014

Revision date 07-May-2015

Version # 09

Further information This safety datasheet only contains information relating to safety and does not replace any product information or product specification.

HMIS® ratings
Health: 1*
Flammability: 0
Physical hazard: 0

NFPA ratings
Health: 1
Flammability: 0
Instability: 0

Disclaimer The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The manufacturer expressly does not make any representations, warranties, or guarantees as to its accuracy, reliability or completeness nor assumes any liability, for its use. It is the user's responsibility to verify the suitability and completeness of such information for each particular use.

Third party materials: Insofar as materials not manufactured or supplied by this manufacturer are used in conjunction with, or instead of this product, it is the responsibility of the customer to obtain, from the manufacturer or supplier, all technical data and other properties relating to these and other materials and to obtain all necessary information relating to them. No liability can be accepted in respect of the use of this product in conjunction with materials from another supplier. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. The information in the sheet was written based on the best knowledge and experience currently available.

Health & Safety

From Technology Supplies

Product Identification

Issue Date: 29/04/02

WD 40 Type 400ml
Cat.No. 950-332

Composition

Mineral oil solvents lubricity additives in aerosol form

Hazardous Ingredients in Product

Name	CAS No.	% Mass	Symbols	R Phrases/OES
Naphtha (Petroleum) Hydrotreated Light	64742-49-0	10-30	Xn	R65
n-Heptane	142-82-5	1-5	Xn, N	R38,65,67,50/53
Mineral oil	64742-65-0	10-30		OES
White Spirit	64742-82-1	0-1	Xn, N	R65,51/53
Butane	106-97-8	10-30		
Propane	74-98-6	10-30		

Hazards

Adverse Health Effects	Repeated contact with the skin may result in skin irritation
Other Hazards	Extremely flammable

First Aid Measures

Inhalation	Remove from exposure. Seek medical help. A properly trained person may administer oxygen if necessary.
Skin contact	Wash from skin using soap and water and seek medical attention if discomfort persists.
Eye contact	Rinse open eye with plenty of water for at least 10 minutes and seek medical attention if symptoms persist.
Ingestion	Seek medical attention. DO NOT INDUCE VOMITING

Fire-fighting measures

Extinguishing media	Use Carbon dioxide, dry chemical, alcohol resistant foam or water spray, fog or mist. Prevent water used in spray from entering watercourses.
Not to be used	Direct water jet
Special fire fighting	Self-contained breathing apparatus should be worn. Fire exposed procedures containers should be kept cool with water sprays. WARNING Aerosol cans may explode in fires. Risk of explosion if heated.

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Accidental release measures

Extinguish sources of ignition and ventilate area. Avoid breathing vapour or wear respiratory equipment. Contain and collect spillage. Failure to contain the release should be notified immediately to the Local Waste Authority. A spillage must he retrieved, if necessary with the help of absorbent material such as floor granules. Dispose of at an appropriate waste disposal facility in accordance with current applicable laws and regulations.

Handling and storage

Handling	Handle in well ventilated areas. Keep away from heat, sparks and open flame.
Storage	Aerosol cans must not be exposed to direct sunlight or temperatures above 50^0C.

Composition

Component Name	OES LT (8hrs)	OES ST (l5mins)
Naphth (Petroleum) Hydrotreated light	1000 ppm	
Mineral oil	5mg/in^3 (oil mist)	
N -Heptane	400 ppm	500 ppm
Butane	600 ppm	750 ppm
Propane	Asphyxiating	Asphyxiating

Personal Protective Equipment

Respiratory Protection	Use HSE approved respiratory protective equipment where significant aerosol or vapour is generated, and the OES (Occupational Exposure Standard) may be exceeded.
Eye Protection	Wear protective safety spectacles.
Hand Protection	Wear PVC Gloves.
Hygenic Work Routines	Do not smoke in work area No eating or drinking while using this material.

Physical and chemical properties: typical data

Physical State	Aerosol
Appearance	Pale Green
Odour	Hydrocarbon
pH	N/A
Flammability Limit	Upper % 9.0 Lower% 0.8
Can Pressure	2.75bar
Solubility	Insoluble in water - Miscible with most solvents

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Stability and reactivity

Stability — Stable at ambient temperature.

Conditions to avoid — Avoid naked flames, contact with red hot surfaces and other high temperature sources. Strong acids/alkalis.

Hazardous decomposition products, Carbon Monoxide, Carbon Dioxide.

Toxicological information

Health Hazards General

Prolonged and repeated contact with solvents over a long period may lead to permanent health problems.

Inhalation — Gas or vapour in high concentrations may irritate respiratory system. Gas or vapour displaces oxygen available for breathing (asphyxient).

Skin — May cause defatting of the skin, but is not classified as an irritant. Prolonged or repeated exposure may cause severe irritation.

Eyes — Spray and vapour in the eyes may cause irritation and smarting.

Ecological information

Bio-accumulate: Not known

Aquatic toxicity: Not known

Disposal consideration

Seek advice from Local Waste Authority before disposing of product. Solvents residues should be transferred to properly labelled and sealed containers. Empty containers must not be burned because of explosion hazard. Under no circumstances should this product be disposed of by putting into drains, soil or water courses. Compliance with Community/National provisions relating to waste must be adhered to when disposing of this product.

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Transport information

Road			
UN Number:	1950	ADR Class No.	2
ADR Item No.	5F	Marginal	2201
Hazchem Code	N/A	Cefic Tec(R) No.	20G27-2
Proper Shipping Name	AEROSOLS		
Road Transport Notes	(Exempted Limited Quantity Provisions Apply)		
Rail			
Rail Transport Class No.	2.1	Rail Road PT	5F
Sea			
IMDO Page No.	2102	Sea Transport Class No.	2.1
Marine Pollutant	No	Sea Pack GR	N/A
Air			
Air Sub Class	N/A	Air Transport Class No.	2.1
	Air Pack OR		N/A

Regulatory information

Classification — Extremely flammable

Risk Phrases — R12 Extremely flammable

Safety Phrases — S2 Keep out of reach of children
516 Keep away from sources of ignition no smoking
S23 DO NOT BREATH VAPOUR/SPRAY
S51 Use only in well ventilated areas.

Statutory Instruments
The Health & Safety at Work act 1974.
Consumer Protection Act
Environmental Protection Act
COSHH Regulations CHIP Regulations

Guidance — COSHH Essentials
CHIP for everyone

Other information

Risk (R) — Phrases used in section 2
R38 — Irritating to skin
R50/53 — Very toxic to aquatic organism, may cause long-term adverse effects in the aquatic environment.
R65 — Harmful may cause lung damage if swallowed. R67 Vapours may cause drowsiness and dizziness

Original Issued date: 01.08.96
Revision: I Date:29.04.02 Changes:All Sections

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Safety Data Sheet



1 - Identification

Product Name: WD-40 Specialist® Water Resistant Silicone Lubricant **Product Use: Cleaner, Lubricant** **Restrictions on Use: None identified** **SDS Date Of Preparation: 07/18/2014**	**Manufacturer: WD-40 Company** **Address: 1061 Cudahy Place (92110)** **P.O. Box 80607** **San Diego, California, USA** **92138 –0607** **Telephone:** **Emergency only: 1-888-324-7596 (PROSAR)** **Information: 1-888-324-7596** **Chemical Spills: 1-800-424-9300 (Chemtrec)** **1-703-527-3887 (International Calls)**

2 – Hazards Identification

Hazcom 2012/GHS Classification:
Flammable Aerosol Category 1
Gas Under Pressure: Compressed Gas
Aspiration Toxicity Category 1

Note: This product is a consumer product and is labeled in accordance with the US Consumer Product Safety Commission regulations which take precedence over OSHA Hazard Communication labeling. The actual container label will not include the label elements below. The labeling below applies to industrial/professional products.

Label Elements:



DANGER!
Extremely Flammable Aerosol.
Contains gas under pressure; may explode if heated.
May be fatal if swallowed and enters airways.

Prevention
Keep away from heat, sparks, open flames, hot surfaces – No smoking.
Do not spray on an open flame or other ignition source.
Pressurized container: Do not pierce or burn, even after use.

Response
IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting.

Storage
Store locked up.
Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F. Store in a well-ventilated place.

Disposal
Dispose of contents and container in accordance with local and national regulations.

3 - Composition/Information on Ingredients

Ingredient	CAS #	Weight Percent	US Hazcom 2012/ GHS Classification
LVP Petroleum Solvent	64742-47-8	60-80	Aspiration Toxicity Category 1
Poly(dimethylsiloxane)	63148-62-9	1-5	Not Hazardous

Propellant (propane, n-butane)	74-98-6/106-97-8	10-30	Flammable Gas Category 1 Gas Under Pressure, Compressed Gas

Note: The exact percentages are a trade secret.

4 – First Aid Measures

Ingestion (Swallowed): Aspiration Hazard. DO NOT induce vomiting. Call physician, poison control center or the WD-40 Safety Hotline at 1-888-324-7596 immediately.
Eye Contact: Flush thoroughly with water. Remove contact lenses if present after the first 5 minutes and continue flushing for several more minutes. Get medical attention if irritation persists.
Skin Contact: Wash with soap and water. If irritation develops and persists, get medical attention.
Inhalation (Breathing): If irritation is experienced, move to fresh air. Get medical attention if irritation or other symptoms develop and persist.
Signs and Symptoms of Exposure: Harmful or fatal is swallowed. If swallowed, may be aspirated and cause lung damage. May cause eye and respiratory irritation. Inhalation may cause coughing, headache and dizziness. Skin contact may cause drying of the skin.
Indication of Immediate Medical Attention/Special Treatment Needed: Immediate medical attention is needed for ingestion.

5 – Fire Fighting Measures

Suitable (and unsuitable) Extinguishing Media: Use water fog, dry chemical, carbon dioxide or foam. Do not use water jet or flooding amounts of water. Burning product will float on the surface and spread fire.
Specific Hazards Arising from the Chemical: Extremely Flammable aerosol. Contents under pressure. Keep away from ignition sources and open flames. Exposure of containers to extreme heat and flames can cause them to rupture often with violent force. A vapor and air mixture can create an explosion hazard in confined spaces. Combustion will produce oxides of carbon, nitrogen and sulfur and hydrocarbons.
Special Protective Equipment and Precautions for Fire-Fighters: Firefighters should always wear positive pressure self-contained breathing apparatus and full protective clothing. Cool fire-exposed containers with water. Use shielding to protect against bursting containers.

6 – Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures: Wear appropriate protective clothing (see Section 8). Eliminate all sources of ignition and ventilate area.
Methods and Materials for Containment/Cleanup: Leaking cans should be placed in a plastic bag or open pail until the pressure has dissipated. Contain and collect liquid with an inert absorbent and place in a container for disposal. Clean spill area thoroughly. Report spills to authorities as required.

7 – Handling and Storage

Precautions for Safe Handling: Avoid contact with eyes. Avoid prolonged contact with skin. Avoid breathing vapors or aerosols. Use only with adequate ventilation. Keep away from heat, sparks, pilot lights, hot surfaces and open flames. Unplug electrical tools, motors and appliances before spraying or bringing the can near any source of electricity. Electricity can burn a hole in the can and cause contents to burst into flames. To avoid serious burn injury, do not let the can touch battery terminals, electrical connections on motors or appliances or any other source of electricity. Wash thoroughly with soap and water after handling. Keep containers closed when not in use. Keep out of the reach of children. Do not puncture, crush or incinerate containers, even when empty.
Conditions for Safe Storage: Store in a cool, well-ventilated area, away from incompatible materials Do not store above 120°F or in direct sunlight. U.F.C (NFPA 30B) Level 3 Aerosol. Store away from oxidizers.

8 – Exposure Controls/Personal Protection

Chemical	Occupational Exposure Limits
LVP Petroleum Solvent	1200 mg/m3 TWA (manufacturer recommended)
Poly(dimethylsiloxane)	None Established

Propane	1000 ppm TWA OSHA PEL
n-Butane	1000 ppm STEL ACGIH TLV

The Following Controls are Recommended for Normal Consumer Use of this Product
Appropriate Engineering Controls: Use in a well-ventilated area.
Personal Protection:
Eye Protection: Avoid eye contact. Always spray away from your face.
Skin Protection: Avoid prolonged skin contact. Chemical resistant gloves recommended for operations where skin contact is likely.
Respiratory Protection: None needed for normal use with adequate ventilation.

For Bulk Processing or Workplace Use the Following Controls are Recommended
Appropriate Engineering Controls: Use adequate general and local exhaust ventilation to maintain exposure levels below that occupational exposure limits.
Personal Protection:
Eye Protection: Safety goggles recommended where eye contact is possible.
Skin Protection: Wear chemical resistant gloves.
Respiratory Protection: None required if ventilation is adequate. If the occupational exposure limits are exceeded, wear a NIOSH approved respirator. Respirator selection and use should be based on contaminant type, form and concentration. Follow OSHA 1910.134, ANSI Z88.2 and good Industrial Hygiene practice.
Work/Hygiene Practices: Wash with soap and water after handling.

9 – Physical and Chemical Properties

Appearance:	Colorless liquid	Flammable Limits: (Solvent Portion)	LEL: 0.6% UEL: 5.0%
Odor:	Mild petroleum odor	Vapor Pressure:	0.07 mmHg @25°C
Odor Threshold:	Not established	Vapor Density:	5.3 (Petroleum Solvent)
pH:	Not Applicable	Relative Density:	Not Determined
Melting/Freezing Point	Not established	Solubilities:	Insoluble in water
Boiling Point/Range:	221°C (430°F)	Partition Coefficient; n-octanol/water:	Not established
Flash Point:	<-30°C (-22°F) (CC ASTM D3828)	Autoignition Temperature:	Not established
Evaporation Rate:	Not established	Decomposition Temperature:	Not established
Flammability (solid, gas)	Flammable Aerosol	Viscosity:	Not established
VOC:	20%	Pour Point:	Not established

10 – Stability and Reactivity

Reactivity: Not reactive under normal conditions
Chemical Stability: Stable
Possibility of Hazardous Reactions: May react with strong oxidizers generating heat.
Conditions to Avoid: Avoid heat, sparks, flames and other sources of ignition. Do not puncture or incinerate containers.
Incompatible Materials: Strong acids, alkalis, and oxidizers.
Hazardous Decomposition Products: Carbon monoxide and carbon dioxide, oxides of nitrogen and sulfur, smoke, fumes, and/or unburned hydrocarbons.

11 – Toxicological Information

Symptoms of Overexposure:
Inhalation: Mist or vapor can irritate the throat and lungs. High concentrations may cause nasal and respiratory irritation and central nervous system effects such as headache, dizziness and nausea. Intentional abuse may be harmful or fatal.

Skin Contact: May cause skin irritation with short-term exposure with redness, itching and burning of the skin. Prolonged and/or repeated contact may produce defatting and dermatitis.
Eye Contact: Contact may be irritating to eyes. May cause redness, stinging, swelling and tearing.
Ingestion: This product has low oral toxicity. If swallowed, this material may cause irritation of the mouth, throat and esophagus. Swallowing may cause gastrointestinal irritation, nausea, vomiting, diarrhea, dizziness, drowsiness and other central nervous system effects. This product is an aspiration hazard. If swallowed, can enter the lungs and may cause chemical pneumonitis, severe lung damage and death.
Chronic Effects: None expected.
Carcinogen Status: None of the components are listed as a carcinogen or suspect carcinogen by IARC, NTP, ACGIH or OSHA.
Reproductive Toxicity: None of the components is considered a reproductive hazard.

Numerical Measures of Toxicity:
The oral toxicity of this product is estimated to be greater than 5,000 mg/kg and the dermal toxicity greater than 2,000 mg/kg based on an assessment of the ingredients. This product is not classified as toxic by established criteria. It is an aspiration hazard.

12 – Ecological Information

Ecotoxicity: No specific aquatic toxicity data is currently available, however components of this product are not expected to be harmful to aquatic organisms
Persistence and Degradability: No data available.
Bioaccumulative Potential: Bioaccumulation is not expected based on an assessment of the ingredients.
Mobility in Soil: No data available
Other Adverse Effects: None known

13 - Disposal Considerations

If this product becomes a waste, it would be expected to meet the criteria of a RCRA ignitable hazardous waste (D001). However, it is the responsibility of the generator to determine at the time of disposal the proper classification and method of disposal. Do not puncture or incinerate containers, even empty. Dispose in accordance with federal, state, and local regulations.

14 – Transportation Information_

DOT Surface Shipping Description:
UN1950, Aerosols, 2.1 Ltd. Qty (Note: Shipping Papers are not required for Limited Quantities unless transported by air or vessel – each package must be marked with the Limited Quantity Mark)
IMDG Shipping Description: Un1950, Aerosols, 2.1, LTD QTY
ICAO Shipping Description: UN1950, Aerosols, flammable, 2.1 NOTE: WD-40 does not test aerosol cans to assure that they meet the pressure and other requirements for transport by air. We do not recommend that our aerosol products be transported by air.

15 – Regulatory Information

U.S. Federal Regulations:
CERCLA 103 Reportable Quantity: This product is not subject to CERCLA reporting requirements, however, oil spills are reportable to the National Response Center under the Clean Water Act and many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.
SARA TITLE III:
Hazard Category For Section 311/312: Acute Health, Fire Hazard, Sudden Release of Pressure
Section 313 Toxic Chemicals: This product contains the following chemicals subject to SARA Title III Section 313 Reporting requirements: None
Section 302 Extremely Hazardous Substances (TPQ): None
EPA Toxic Substances Control Act (TSCA) Status: All of the components of this product are listed on the TSCA inventory.

VOC Regulations: This product complies with the consumer product VOC limits of CARB, the US EPA and states adopting the OTC VOC rules.
California Safe Drinking Water and Toxic Enforcement Act (Proposition 65): This product does not contain chemicals regulated under California Proposition 65.
Canadian Environmental Protection Act: One of the components is listed on the NDSL. All of the other ingredients are listed on the Canadian Domestic Substances List or exempt from notification.
Canadian WHMIS Classification: Class A (Compressed Gas), Class B-5 (Flammable Aerosol), Class D-2-B (Toxic material causing other chronic effects)
This MSDS has been prepared according to the criteria of the Controlled Products Regulation (CPR) and the MSDS contains all of the information required by the CPR.

16 – Other Information:

HMIS Hazard Rating:
Health – 1 (slight hazard), Fire Hazard – 4 (severe hazard), Physical Hazard – 0 (minimal hazard)

Revision Date: July 2014 Supersedes: June 2011

Revision Summary: Convert to Hazcom 2012. Changes in all sections.

Prepared by: Industrial Health & Safety Consultants, Inc. Shelton, CT, USA

APPROVED BY: I. Kowalski

1051200/No.0040902

Common Name: WELDWOOD ORIGINAL CONTACT CEMENT
Manufacturer: DAP
SDS Revision Date: 6/19/2015
SDS Format: GHS-US

Grainger Item Number(s): 29RU98, 29RU99, 29RV01, 5E094, 5E095
Manufacturer Model Number(s):

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SDS NUMBER: 00030503001

REVISION DATE: 6/19/2015

DAP(R*)

SAFETY DATA SHEET

24 HOUR EMERGENCY PHONE NUMBERS MEDICAL/POISON CONTROL:
IN U.S.: CALL 1-800-222-1222

OUTSIDE U.S.: CALL YOUR LOCAL POISON CONTROL CENTER

TRANSPORTATION/NATIONAL RESPONSE CENTER:
1-800-535-5053
1-352-323-3500

NOTE:
THE NATIONAL RESPONSE CENTER EMERGENCY NUMBERS TO BE USED ONLY IN THE EVENT OF CHEMICAL EMERGENCIES INVOLVING A SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT INVOLVING CHEMICALS.

IMPORTANT:

PROVIDE THIS INFORMATION TO EMPLOYEES, CUSTOMERS, AND USERS OF THIS PRODUCT READ THIS SDS BEFORE HANDLING OR DISPOSING OF THIS PRODUCT. THIS PRODUCT IS COVERED BY THE OSHA HAZARD COMMUNICATION STANDARD AND THIS DOCUMENT HAS BEEN PREPARED IN ACCORDANCE WITH REQUIREMENTS OF THIS STANDARD. ALL ABBREVIATED TERMS USED IN THIS MSDS ARE FURTHER DESCRIBED IN SECTION 16.

1. IDENTIFICATION

top

THIS MATERIAL SAFETY DATA SHEET IS AVAILABLE IN AMERICAN SPANISH UPON REQUEST.

PRODUCT NAME: WELDWOOD ORIGINAL CONTACT CEMENT

PRODUCT UPC NUMBER: 00271, 00272, 00273

PRODUCT USE/CLASS: CONTACT ADHESIVE

MANUFACTURER:
DAP PRODUCTS INC.
2400 BOSTON STREET SUITE 200
BALTIMORE, MD 21224-4723
888-327-8477 (NON - EMERGENCY MATTERS)

PREPARER: REGULATORY DEPARTMENT

REVISION DATE: 6/19/2015

SUPERSEDES DATE: 7/18/2013

SDS NO: 00030503001

2. HAZARDS IDENTIFICATION

top

EMERGENCY OVERVIEW:

DANGER!

FLAMMABLE LIQUID AND VAPOR. VAPORS MAY CAUSE FLASH FIRE OR EXPLOSION. VAPORS CAN FORM AN IGNITABLE MIXTURE WITH AIR. VAPORS CAN FLOW ALONG SURFACES TO A DISTANT IGNITION SOURCE AND FLASH BACK. DO NOT SMOKE. EXTINGUISH ALL FLAMES AND PILOT LIGHTS, AND TURN OFF STOVES, HEATERS, ELECTRIC MOTORS AND OTHER SOURCES OF IGNITION DURING USE AND UNTIL ALL VAPORS ARE GONE. KEEP CONTAINER

CLOSED AND AWAY FROM HEAT, SPARKS, AND OPEN FLAME. STORE AWAY FROM CAUSTICS AND OXIDIZERS. AVOID BREATHING VAPOR. AVOID SKIN AND EYE CONTACT. USE ONLY WITH ADEQUATEVENTILATION. PREVENT BUILD-UP OF VAPORS BY OPENING ALL WINDOWS AND DOORS TO ACHIEVE CROSS-VENTILATION. IRRITATING TO EYES RESPIRATORY SYSTEM AND SKIN. HARMFUL OR FATAL IF SWALLOWED. ASPIRATION HAZARD IF SWALLOWED - CAN ENTER LUNGS AND CAUSE DAMAGE. MAY AFFECT THE BRAIN OR NERVOUS SYSTEM CAUSING DIZZINESS, HEADACHE OR NAUSEA.

GHS CLASSIFICATION:
ACUTE TOX. 4 INHALATION, ACUTE TOX. 4 ORAL, CARC. 1B, EYE IRRIT. 2, FLAM. LIQ. 2, MUTA. 1B, SKIN IRRIT. 2, STOT RE 2, STOT SE 3 NE, STOT SE 3 RTI

SYMBOL(S) OF PRODUCT:
EXCLAMATION MARK
HEALTH HAZARD
FLAME

SIGNAL WORD: DANGER

GHS HAZARD STATEMENTS:

FLAMMABLE LIQUID, CATEGORY 2:
H225: HIGHLY FLAMMABLE LIQUID AND VAPOUR.

ACUTE TOXICITY, ORAL, CATEGORY 4:
H302: HARMFUL IF SWALLOWED.

SKIN IRRITATION, CATEGORY 2:
H315: CAUSES SKIN IRRITATION.

EYE IRRITATION, CATEGORY 2:
H319: CAUSES SERIOUS EYE IRRITATION.

ACUTE TOXICITY, INHALATION, CATEGORY 4:
H332: HARMFUL IF INHALED.

STOT, SINGLE EXPOSURE, CATEGORY 3, RTI:
H335: MAY CAUSE RESPIRATORY IRRITATION.

STOT, SINGLE EXPOSURE, CATEGORY 3, NE:
H336: MAY CAUSE DROWSINESS OR DIZZINESS.

GERM CELL MUTAGENICITY, CATEGORY 1B:

H340:
MAY CAUSE GENETIC DEFECTS. CLASSIFIED AS MUTAGENIC CATEGORY 1 IF ONE INGREDIENT IS PRESENT AT OR ABOVE 0.1% APPLIES TO LIQUIDS, SOLIDS (W/W UNITS) A GASES (V/V). THE SUBSTANCE MAY ALSO HAVE ITS OWN EXPOSURE LIMIT. ROUTES OF EXPOSURE ARE DEPENDANT ON INGREDIENT FORM.

CARCINOGENICITY, CATEGORY 1B:

H350:
MAY CAUSE CANCER. CLASSIFIED AS CARCINOGENIC CATEGORY 1 ON THE BASIS OF EPIDEMIOLOGICAL AND/OR ANIMAL DATA. MIXTURES ARE CLASSIFIED AS CARCINOGENIC WHEN AT LEAST 1 INGREDIENT HAS BEEN CLASSIFIED AS CARCINOGENIC AND IS PRESENT AT 0.1% OR ABOVE ROUTES OF EXPOSURE ARE DEPENDANT ON INGREDIENT FORM.

STOT, REPEATED EXPOSURE, CATEGORY 2:

H373:
MAY CAUSE DAMAGE TO ORGANS <OR STATE ALL ORGANS AFFECTED, IF KNOWN> THROUGH PROLONGED OR REPEATED EXPOSURE <STATE ROUTE OF EXPOSURE IF IT IS CONCLUSIVELY PROVEN THAT NO OTHER ROUTES OF EXPOSURE CAUSE THE HAZARD>.

GHS LABEL PRECAUTIONARY STATEMENTS:

P201: OBTAIN SPECIAL INSTRUCTIONS BEFORE USE.

P210:
KEEP AWAY FROM HEAT, HOT SURFACES, SPARKS, OPEN FLAMES AND OTHER IGNITION SOURCES. NO SMOKING.

P260: DO NOT BREATHE DUST/FUME/GAS/MIST/VAPOURS/SPRAY.

P28O:
WEAR PROTECTIVE GLOVES/PROTECTIVE CLOTHING/EYE PROTECTION/FACE PROTECTION.

P281: USE PERSONAL PROTECTIVE EQUIPMENT AS REQUIRED.

P302+P352:
IF ON SKIN: WASH WITH PLENTY OF SOAP AND WATER.

P305+P351+P338:

IF IN EYES:
RINSE CAUTIOUSLY WITH WATER FOR SEVERAL MINUTES. REMOVE CONTACT LENSES, IF PRESENT AND EASY TO DO. CONTINUE RINSING.

P308+P313:
IF EXPOSED OR CONCERNED: GET MEDICAL ADVICE/ATTENTION.

P312: CALL A POISON CENTER OR DOCTOR/PHYSICIAN IF YOU FEEL UNWELL.

P337+P313:
IF EYE IRRITATION PERSISTS: GET MEDICAL ADVICE/ATTENTION.

P362: TAKE OFF CONTAMINATED CLOTHING.

P403+P233: STORE IN A WELL-VENTILATED PLACE. KEEP CONTAINER TIGHTLY CLOSED.

GHS SDS PRECAUTIONARY STATEMENTS:
P240: GROUND/BOND CONTAINER AND RECEIVING EQUIPMENT.
P241: USE EXPLOSION-PROOF ELECTRICAL/VENTILATING/LIGHTING/.../EQUIPMENT.
P242: USE ONLY NON-SPARKING TOOLS.
P243: TAKE PRECAUTIONARY MEASURES AGAINST STATIC DISCHARGE.
P270: DO NO EAT, DRINK OR SMOKE WHEN USING THIS PRODUCT.

3. COMPOSITION/INFORMATION ON INGREDIENTS

top

CHEMICAL NAME	CAS-NO.	WT. %	GHS SYMBOLS	GHS STATEMENTS
TOLUENE	108-88-3	50-75	GHS02-GHS03-GHS07-GHS08	H225-270-302-304-315-332-335-336-373
METHYL ETHYL KETONE (MEK)	78-93-3	10-25	GHS02-GHS03-GHS07	H225-270-319-332-336
LIGHT ALIPHATIC SOLVENT NAPHTHA	64742-89-8	2.5-10	GHS03-GHSG6-GHS08	H270-304-331-340-350
N-HEPTANE	142-82-5	2.5-10	GHS02-GHS03-GHS07-GHS08	H225-270-304-315-336
MAGNESIUM OXIDE FUME	1309-48-4	1.0-2.5	GHS03	H270

THE TEXT FOR GHS HAZARD STATEMENTS SHOWN ABOVE (IF ANY) IS GIVEN IN THE "OTHER INFORMATION" SECTION.

4. FIRST-AID MEASURES

top

FIRST AID - INHALATION:
IF INHALED, REMOVE TO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN. GET MEDICAL ATTENTION IMMEDIATELY.

NOTE:
ONLY TRAINED PERSONNEL SHOULD ADMINISTER ARTIFICIAL RESPIRATION OR GIVE OXYGEN.

FIRST AID - SKIN CONTACT:
WASH SKIN WITH SOAP AND WATER FOR 15 MINUTES. GET MEDICAL AID IF SYMPTOMS PERSIST. REMOVE AND WASH CONTAMINATED CLOTHING. DO NOT TRY TO PEEL THE SOLIDIFIED MATERIAL FROM THE SKIN OR USE SOLVENTS OR THINNERS TO DISSOLVE IT. THE USE OF VEGETABLE OIL OR MINERAL OIL IS RECOMMENDED FOR REMOVAL OF THIS MATERIAL FROM THE SKIN. FLUSH EXPOSED AREA WITH WATER WHILE REMOVING CONTAMINATED CLOTHING. GET MEDICAL ATTENTION IF IRRITATION PERSISTS. TO REMOVE FROM SKIN, REMOVE COMPLETELY WITH A DRY CLOTH OR PAPER TOWEL, BEFORE WASHING WITH DETERGENT AND WATER.

FIRST AID - EYE CONTACT:
IF MATERIAL GETS INTO EYES, FLUSH WITH WATER IMMEDIATELY FOR 15 MINUTES. CONSULT A PHYSICIAN.

FIRST AID - INGESTION:
IF SWALLOWED, DO NOT INDUCE VOMITING. GET MEDICAL ATTENTION IMMEDIATELY.

5. FIRE-FIGHTING MEASURES

top

UNUSUAL FIRE AND EXPLOSION HAZARDS:

ELIMINATE SOURCES OF IGNITION:
HEAT, ELECTRICAL EQUIPMENT, SPARKS AND FLAMES. VAPORS CAN FORM AN IGNITABLE MIXTURE WITH AIR. VAPORS CAN FLOW ALONG SURFACES TO A DISTANT IGNITION SOURCE AND FLASH BACK. VAPORS MAY FORM EXPLOSIVE MIXTURES WITH AIR. CONTAINERS MAY EXPLODE IF EXPOSED TO EXTREME HEAT. EMPTY CONTAINERS RETAIN PRODUCT RESIDUE (LIQUID AND/OR VAPOR). VAPOR CAN IGNITE POTENTIALLY CAUSING AN EXPLOSION.

SPECIAL FIREFIGHTING PROCEDURES:
WEAR SELF-CONTAINED BREATHING APPARATUS PRESSURE-DEMAND (NIOSH APPROVED OR EQUIVALENT) AND FULL PROTECTIVE GEAR. USE WATER SPRAY TO COOL EXPOSED SURFACES.
COOL FIRE-EXPOSED CONTAINERS USING WATER SPRAY.

EXTINGUISHING MEDIA: CARBON DIOXIDE, DRY CHEMICAL, FOAM

6. ACCIDENTAL RELEASE MEASURES

top

ENVIRONMENTAL MEASURES: NO INFORMATION

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:

NOTE:
REVIEW FIRE HAZARDS BEFORE PROCEEDING WITH CLEAN UP. IMMEDIATELY ELIMINATE SOURCES OF IGNITION. KEEP PEOPLE AWAY FROM AND UPWIND OF SPILL/LEAK. SCRAPE UP DRIED MATERIAL AND PLACE INTO CONTAINERS. PREVENT PRODUCT FROM ENTERING DRAINS. SOAK UP WITH INERT ABSORBENT MATERIAL AND DISPOSE OF AS HAZARDOUS WASTE. READ ALL PRODUCT INSTRUCTIONS BEFORE USING. PERSONAL PROTECTIVE EQUIPMENT SHOULD INCLUDE IMPERVIOUS GLOVES, PROTECTIVE EYE WEAR, AND SUITABLE WORK CLOTHES.

7. HANDLING AND STORAGE

top

HANDLING:
KEEP OUT OF REACH OF CHILDREN! DO NOT TAKE INTERNALLY. REMOVE ALL SOURCES OF IGNITION. KEEP AWAY FROM OPEN FLAMES, HOT SURFACES AND SOURCES OF IGNITION. PROVIDE ADEQUATE VENTILATION. AVOID HEAT, SPARKS AND OPEN FLAMES. WEAR APPROPRIATE PERSONAL PROTECTION. AVOID BREATHING VAPOR AND CONTACT WITH EYES, SKIN AND CLOTHING. USE IN WELL VENTILATED AREA. OPEN ALL WINDOWS AND DOORS OR USE OTHER MEANS TO ENSURE CROSS-VENTILATION AND FRESH AIR ENTRY DURING APPLICATION AND DRYING. ODOR IS NOT AN ADEQUATE WARNING FOR HAZARDOUS CONDITIONS. EMPTY CONTAINERS RETAIN PRODUCT RESIDUE (LIQUID AND/OR VAPOR). VAPOR CAN IGNITE POTENTIALLY CAUSING AN EXPLOSION. WASH THOROUGHLY AFTER HANDLING. DO NOT USE IN AREAS WHERE STATIC SPARKS MAY BE GENERATED. INTENTIONAL MISUSE BY DELIBERATELY CONCENTRATING AND INHALING VAPORS MAY BE HARMFUL OR FATAL. CONSTRUCTION AND REPAIR ACTIVITIES CAN ADVERSELY AFFECT INDOOR AIR QUALITY. CONSULT WITH OCCUPANTS OR A REPRESENTATIVE (I.E. MAINTENANCE, BUILDING MANAGER, INDUSTRIAL HYGIENIST, OR SAFETY OFFICER) TO DETERMINE WAYS TO MINIMIZE IMPACT.

STORAGE:
STORE AWAY FROM SOURCES OF IGNITION AND HEAT. DO NOT STORE AT TEMPERATURES ABOVE 120 DEGREES F. STORE CONTAINERS AWAY FROM EXCESSIVE HEAT AND FREEZING. STORE AWAY FROM CAUSTICS AND OXIDIZERS. KEEP CONTAINERS TIGHTLY CLOSED.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

top

INGREDIENTS WITH OCCUPATIONAL EXPOSURE LIMITS:

CHEMICAL NAME	ACGIH TLV-TWA	ACGIH-TLV STEL	OSHA PEL-TWA	OSHA PEL-CEILING
TOLUENE	20 PPM TWA	N.E.	200 PPM TWA	300 PPM CEILING
METHYL ETHYL KETONE (MEK)	200 PPM TWA	300 PPM STEL	200 PPM TWA, 590 MG/M3 TWA	N.E.
LIGHT ALIPHATIC SOLVENT NAPHTHA	N.E.	N.E.	N.E.	N.E.
N-HEPTANE	400 PPM TWA HEPTANE, ALL ISOMERS	500 PPM STEL HEPTANE, ALL ISOMERS	500 PPM TWA, 2000 MG/M3 TWA	N.E.
MAGNESIUM OXIDE FUME	10 MG/M3 TWA INHALABLE FRACTION	N.E.	15 MG/M3 TWA FUME, TOTAL PARTICULATE	N.E.

FURTHER ADVICE:
MEL = MAXIMUM EXPOSURE LIMIT
OES = OCCUPATIONAL EXPOSURE STANDARD
SUP = SUPPLIER'S RECOMMENDATION
SK = SKIN SENSITIZER
N.E. = NOT ESTABLISHED

PERSONAL PROTECTION:

RESPIRATORY PROTECTION:
A NIOSH-APPROVED AIR PURIFYING RESPIRATOR WITH AN ORGANIC VAPOR CARTRIDGE OR CANISTER MAY BE NECESSARY UNDER CERTAIN CIRCUMSTANCES WHERE AIRBORNE CONCENTRATIONS ARE EXPECTED TO EXCEED EXPOSURE LIMITS. IF CONCENTRATIONS

EXCEED THE EXPOSURE LIMITS SPECIFIED, USE OF A NIOSH-APPROVED SUPPLIED AIR RESPIRATOR IS RECOMMENDED. WHERE THE PROTECTION FACTOR IS EXCEEDED, USE OF A SELF CONTAINED BREATHING APPARATUS (SCBA) MAY BE NECESSARY. IF YOU EXPERIENCE EYE WATERING, HEADACHE OR DIZZINESS OR IF AIR MONITORING DEMONSTRATES VAPOR/MIST LEVELS ARE ABOVE APPLICABLE LIMITS, WEAR AND APPROPRIATE, PROPERLY FITTED RESPIRATOR (NIOSH APPROVED) DURING AND AFTER APPLICATION. A RESPIRATORY PROTECTION PROGRAM THAT MEETS THE OSHA 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE.

SKIN PROTECTION: SOLVENT-RESISTANT GLOVES.

EYE PROTECTION: GOGGLES OR SAFETY GLASSES WITH SIDE SHIELDS.

OTHER PROTECTIVE EQUIPMENT:
PROVIDE EYEWASH AND SOLVENT IMPERVIOUS APRON IF BODY CONTACT MAY OCCUR.

HYGIENIC PRACTICES: REMOVE AND WASH CONTAMINATED CLOTHING BEFORE RE-USE.

9. PHYSICAL AND CHEMICAL PROPERTIES

top

APPEARANCE: TAN

ODOR: STRONG SOLVENT

DENSITY, G/CM3: 0.88 - 0.88

FREEZE POINT, DEG. C: NOT ESTABLISHED

SOLUBILITY IN WATER: NOT ESTABLISHED

DECOMPOSITION TEMPERATURE, DEG. C: NOT ESTABLISHED

BOILING RANGE, DEG. C: 76.7 - 82.2

MINIMUM FLASH POINT, DEG. C: -6.1

EVAPORATION RATE: FASTER THAN N-BUTYL ACETATE

VAPOR DENSITY: HEAVIER THAN AIR

COMBUSTIBILITY: DOES NOT SUPPORT COMBUSTION

PHYSICAL STATE: LIQUID

ODOR THRESHOLD: NOT ESTABLISHED

PH: NOT APPLICABLE

VISCOSITY (MPA.S): NOT ESTABLISHED

PARTITION COEFF., N-OCTANOL/WATER: NOT ESTABLISHED

EXPLOSIVE LIMITS, %: N.I. - N.I.

AUTO-IGNITION TEMPERATURE, DEG. C: NOT ESTABLISHED

VAPOR PRESSURE, MMHg: NO INFORMATION

FLASH METHOD: SETA CLOSED CUP

(SEE "OTHER INFORMATION" SECTION FOR ABBREVIATION LEGEND)

(IF PRODUCT IS AN AEROSOL, THE FLASH POINT STATED ABOVE IS THAT OF THE PROPELLANT.)

10. STABILITY AND REACTIVITY

top

STABILITY: STABLE UNDER RECOMMENDED STORAGE CONDITIONS.

CONDITIONS TO AVOID:
KEEP AWAY FROM OPEN FLAMES, HOT SURFACES AND SOURCES OF IGNITION. KEEP AWAY FROM OXIDIZING AGENTS, STRONGLY ALKALINE AND STRONGLY ACID MATERIALS IN ORDER TO AVOID EXOTHERMIC REACTIONS. AVOID CONTACT WITH SKIN, EYES AND CLOTHING. DO NOT SMOKE.

INCOMPATIBILITY:
OPEN FLAMES, HOT SURFACES AND SOURCES OF IGNITION. KEEP AWAY FROM STRONG OXIDIZING AGENTS, HEAT AND OPEN FLAMES. EXOTHERMIC REACTION WITH STRONG ACIDS. STRONG OXIDIZERS, ALKALI METALS AND ALKALINE EARTH METALS MAY CAUSE FIRES OR EXPLOSIONS.

HAZARDOUS DECOMPOSITION PRODUCTS:
NORMAL DECOMPOSITION PRODUCTS, I.E., COX, NOX.

11. TOXICOLOGICAL INFORMATION

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EFFECT OF OVEREXPOSURE - INHALATION:
INHALATION OF VAPORS MAY CAUSE IRRITATION OF THE NOSE, THROAT, LUNGS AND RESPIRATORY TRACT. INHALATION OF VAPORS IN HIGH CONCENTRATION MAY CAUSE SHORTNESS OF BREATH (LUNG EDEMA). INTENTIONAL MISUSE BY DELIBERATELY CONCENTRATING AND INHALING THE CONTENTS MAY BE HARMFUL OR FATAL. PROLONGED, REPEATED OR HIGH EXPOSURES MAY CAUSE CENTRAL NERVOUS SYSTEM DEPRESSION LEADING TO HEADACHES, NAUSEA, DROWSINESS, DIZZINESS, AND POSSIBLY NARCOSIS. IN EXTREME CASES, MAY CAUSE LOSS OF CONSCIOUSNESS.

EFFECT OF OVEREXPOSURE - SKIN CONTACT:
HARMFUL IF ABSORBED THROUGH THE SKIN. MAY CAUSE SKIN IRRITATION. PROLONGED AND REPEATED SKIN CONTACT MAY CAUSE DERMATITIS, DRYING AND DEFATTING DUE TO THE SOLVENT PROPERTIES.

EFFECT OF OVEREXPOSURE - EYE CONTACT:
MAY CAUSE EYE IRRITATION. SIGNS AND SYMPTOMS MAY INCLUDE: PAIN, TEARS, SWELLING, REDNESS AND BLURRED VISION.

EFFECT OF OVEREXPOSURE - INGESTION:
HARMFUL OR FATAL IF SWALLOWED. INGESTION MAY CAUSE GASTROINTESTINAL IRRITATION, NAUSEA, VOMITING AND DIARRHEA. MAY CAUSE GASTROINTESTINAL DISTURBANCES WITH DIZZINESS AND CENTRAL NERVOUS SYSTEM DEPRESSION. IF INGESTED, MAY CAUSE DEPRESSED RESPIRATION. ASPIRATION HAZARD IF SWALLOWED. ASPIRATION OF MATERIAL INTO THE LUNGS DUE TO VOMITING CAN CAUSE CHEMICAL PNEUMONITIS, WHICH CAN BE FATAL.

CARCINOGENICITY: NO INFORMATION

PRIMARY ROUTE(S) OF ENTRY: INHALATION, SKIN CONTACT

ACUTE TOXICITY VALUES:
THE ACUTE EFFECTS OF THIS PRODUCT HAVE NOT BEEN TESTED. DATA ON INDIVIDUAL COMPONENTS ARE TABULATED BELOW

CAS-NO.	CHEMICAL NAME	ORAL LD50	DERMAL LD50	VAPOR LC50
108-88-3	TOLUENE	636 MG/KG RAT	8390 MG/KG RABBIT	12.5 MG/L RAT
78-93-3	METHYL ETHYL KETONE (MEK)	>2737 MG/KG RAT	>5000 MG/KG RABBIT	23.5 MG/L RAT
64742-89-8	LIGHT ALIPHATIC SOLVENT NAPHTHA	5000 MK/KG MOUSE	3000 MG/KG RABBIT	>4.96 MG/L RAT
142-82-5	N-HEPTANE	5000 MG/KG RAT	3000 MG/KG RABBIT	>29.29 MG/L RAT
1309-48-4	MAGNESIUM OXIDE FUME	>2000 MG/KG	>2000 MG/KG	>20 MG/L

N.I.: NO INFORMATION

12. ECOLOGICAL INFORMATION

top

ECOLOGICAL INFORMATION:
ECOLOGICAL INJURIES ARE NOT KNOWN OR EXPECTED UNDER NORMAL USE.

13. DISPOSAL INFORMATION

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DISPOSAL INFORMATION:
RESIDUES AND SPILLED MATERIAL ARE HAZARDOUS WASTE DUE TO IGNITABILITY. DISPOSE OF MATERIAL IN ACCORDANCE WITH ALL FEDERAL, STATE AND LOCAL REGULATIONS. STATE AND LOCAL REGULATIONS/RESTRICTIONS ARE COMPLEX AND MAY DIFFER FROM FEDERAL REGULATIONS. RESPONSIBILITY FOR PROPER WASTE DISPOSAL IS WITH THE OWNER OF THE WASTE. LIQUIDS CANNOT BE DISPOSED OF IN A LANDFILL. DO NOT FLUSH INTO SURFACE WATER OR SANITARY SEWER SYSTEM. DO NOT EMPTY INTO DRAINS. DO NOT RE-USE EMPTY CONTAINERS. THE CONTAINER FOR THIS PRODUCT CAN PRESENT EXPLOSION OR FIRE HAZARDS, EVEN WHEN EMPTIED. TO AVOID RISK OF INJURY, DO NOT CUT, PUNCTURE, OR WELD ON OR NEAR THIS CONTAINER.

14. TRANSPORT INFORMATION

top

SPECIAL TRANSPORT PRECAUTIONS: NO INFORMATION

DOT UN/NA NUMBER: UN1133

DOT PROPER SHIPPING NAME: ADHESIVES, CONTAINING A FLAMMABLE LIQUID.

DOT TECHNICAL NAME: N.A.

DOT HAZARD CLASS: 3

HAZARD SUBCLASS: N.A.

PACKING GROUP: III

15. REGULATORY INFORMATION

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U.S. FEDERAL REGULATIONS:

CERCLA - SARA HAZARD CATEGORY:

THIS PRODUCT HAS BEEN REVIEWED ACCORDING TO THE EPA 'HAZARD CATEGORIES' PROMULGATED UNDER SECTIONS 311 AND 312 OF THE SUPERFUND AMENDMENT AND REAUTHORIZATION ACT OF 1986 (SARA TITLE III) AND IS CONSIDERED, UNDER APPLICABLE DEFINITIONS, TO MEET THE FOLLOWING CATEGORIES:
FIRE HAZARD, ACUTE HEALTH HAZARD, CHRONIC HEALTH HAZARD

SARA SECTION 313:

THIS PRODUCT CONTAINS THE FOLLOWING SUBSTANCES SUBJECT TO THE REPORTING REQUIREMENTS OF SECTION 313 OF TITLE III OF THE SUPERFUND AMENDMENT AND REAUTHORIZATION ACT OF 1986 AND 40 CFR PART 372:

CHEMICAL NAME	CAS-NO.
TOLUENE	108-88-3

TOXIC SUBSTANCES CONTROL ACT:
ALL INGREDIENTS IN THIS PRODUCT ARE EITHER ON TSCA INVENTORY LIST, OR OTHERWISE EXEMPT.

THIS PRODUCT CONTAINS THE FOLLOWING CHEMICAL SUBSTANCES SUBJECT TO THE REPORTING REQUIREMENTS OF TSCA 12(B) IF EXPORTED FROM THE UNITED STATES:
NO TSCA 12(B) COMPONENTS EXIST IN THIS PRODUCT.

CALIFORNIA PROPOSITION 65 CARCINOGENS:

WARNING:
THIS PRODUCT CONTAINS CHEMICALS KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER.

CALIFORNIA PROPOSITION 65 REPRODUCTIVE TOXINS:

WARNING:
THIS PRODUCT CONTAINS CHEMICALS KNOWN TO THE STATE OF CALIFORNIA TO CAUSE BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM.

INTERNATIONAL REGULATIONS: AS FOLLOWS -

CANADIAN WHMIS:
THIS MSDS HAS BEEN PREPARED IN COMPLIANCE WITH CONTROLLED PRODUCT REGULATIONS EXCEPT FOR THE USE OF THE 16 HEADINGS.

WHMIS CLASS: NO INFORMATION

16. OTHER INFORMATION

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REVISION DATE: 6/19/2015

SUPERSEDES DATE: 7/18/2013

REASON FOR REVISION: HAZCOM2012/GHS CONVERSION

DATASHEET PRODUCED BY: REGULATORY DEPARTMENT

HMIS RATINGS:

HEALTH 2
FLAMMABILITY 3
REACTIVITY 0
PERSONAL PROTECTION X

VOC LESS WATER LESS EXEMPT SOLVENT, G/L: 705.5

VOC MATERIAL, G/L: 704

VOC AS DEFINED BY CALIFORNIA CONSUMER PRODUCT REGULATION, WT/WT%: 80.4

TEXT FOR GHS HAZARD STATEMENTS SHOWN IN SECTION 3 DESCRIBING EACH INGREDIENT:

H225: HIGHLY FLAMMABLE LIQUID AND VAPOUR.

H270: MAY CAUSE OR INTENSIFY FIRE; OXIDIZER.

H302: HARMFUL IF SWALLOWED.

H304: MAY BE FATAL IF SWALLOWED AND ENTERS AIRWAYS.

H315: CAUSES SKIN IRRITATION.

H319: CAUSES SERIOUS EYE IRRITATION.

H331: TOXIC IF INHALED.

H332: HARMFUL IF INHALED.

H335: MAY CAUSE RESPIRATORY IRRITATION.

H336: MAY CAUSE DROWSINESS OR DIZZINESS.

H340:
MAY CAUSE GENETIC DEFECTS <STATE ROUTE OF EXPOSURE IF IT IS CONCLUSIVELY PROVEN THAT NO OTHER ROUTES OF EXPOSURE CAUSE THE HAZARDS H350 MAY CAUSE CANCER.

H373:
MAY CAUSE DAMAGE TO ORGANS <OR STATE ALL ORGANS AFFECTED, IF KNOWN> THROUGH PROLONGED OR REPEATED EXPOSURE <STATE ROUTE OF EXPOSURE IF IT IS CONCLUSIVELY PROVEN THAT NO OTHER ROUTES OF EXPOSURE CAUSE THE HAZARD>.

ICONS FOR GHS PICTOGRAMS SHOWN IN SECTION 3 DESCRIBING EACH INGREDIENT:
GHS02: FLAME
GHS03: FLAME OVER CIRCLE
GHS06: SKULLS AND CROSSBONES
GHS07: EXCLAMATION MARK
GHS08: HEALTH HAZARD

LEGEND:
N.A. - NOT APPLICABLE
N.E. - NOT ESTABLISHED
N.D. - NOT DETERMINED

DAP BELIEVES THE DATA AND STATEMENTS CONTAINED HEREIN ARE ACCURATE AS OF THE DATE HEREOF. THEY ARE OFFERED IN GOOD FAITH AS TYPICAL VALUES AND NOT AS A PRODUCT SPECIFICATION. NO WARRANTY OF MERCHANTABILITY, WARRANTY OF FITNESS FOR ANY PARTICULAR PURPOSE OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, IS MADE WITH REGARD TO THE INFORMATION HEREIN PROVIDED OR THE PRODUCT TO WHICH THE INFORMATION REFERS. SINCE THIS DOCUMENT IS INTENDED ONLY AS A GUIDE TO THE APPROPRIATE USE AND PRECAUTIONARY HANDLING OF THE REFERENCED PRODUCT BY A PROPERLY TRAINED PERSON, IT IS THEREFORE THE RESPONSIBILITY OF THE USER

TO (I) REVIEW THE RECOMMENDATIONS WITH DUE CONSIDERATION FOR THE SPECIFIC CONTEXT OF THE INTENDED USE AND (II) DETERMINE IF THEY ARE APPROPRIATE.

WILLIAMS PRODUCTS, INC.
1750 Maplelawn
Troy, Michigan 48084
1-800-521-9594 8:30 am - 5:00 pm
EMERGENCY PHONE (24 hours) : CHEM TEL 1-800-255-3924

Revised 01/01/17

SAFETY DATA SHEET

SECTION 1 **Product Identification**

TRADE NAME: Williams Everlastic 1056 Joint Filler

SECTION 2 **Hazardous Identification**

Hazardous Ingredient: None

SECTION 3 **Composition/Information of Ingredients**

Description: Elastomeric closed-cell foam comprised of nitrile butadiene rubber/polyvinyl chloride (NBR/PVC)

SECTION 4 **First-Aid Measures**

Inhalation: Unlikely route of exposure. No measures established

Eyes: Small particles may cause irritations. Flush with water. If irritation persists consult a physician.

Skin: If rash or irritations develops, wash with soap and water. If rash or irritation persists consult a physician

Ingestion: Unlikely route of exposure. No adverse effects anticipated.

SECTION 5 **Fire-Fighting Measures**

Extinguishing Media: Water, carbon dioxide, dry chemical, foam

Special Procedures: Recommended NIOSH/MSHA approved self-contained breathing apparatus and full protective clothing be worn

Decomposition Products: Upon combustion, HCI, HCN, and other hazardous gases may be evolved

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SECTION 6 **Accidental Release Measures**

Personal Protections: Recommended light to medium duty cloth or leather gloves and approved safety glasses

Emergency Procedures: None

SECTION 7 Handling and Storage

Storage Conditions: Avoid storage in confined areas where temperatures may exceed 51°C (125°F)

Handling Procedures: None

SECTION 8 Exposure Controls/Personal Protection

Medical Conditions Aggravated by Exposure: Not established

Codes Used: N/A

General Health Measures: N/A

Engineering Controls: Local exhaust ventilation is recommended for control of airborne dust, fumes, and vapors in confined areas

SECTION 9 Physical and Chemical Properties

Appearance: Sheets, rolls, and tubes; some with self-adhesive

Color: Black, white, or gray

Odor: Negligible to no odor

Melting/Boiling Point: N/A

Lower/Upper Explosion Limit: N/A

Vapor Pressure @ 20°C: 0.1

SECTION 10 Stability and Reactivity

Stability: Stable

Incompatible Substances: N/A

Decomposition Products: Upon combustion, HCI, HCN, and other hazardous gases may be evolved

SECTION 11 Toxicological Information

When used and handled according to specification, the product does not have any harmful effect according to our experience and knowledge

SECTION 12 Ecological Information

Classified as non-hazardous to waters

SECTION 13 **Disposal Considerations**

Dispose waste according to applicable local, state, and federal regulations

WILLIAMS PRODUCTS, INC.
1750 Maplelawn
Troy, Michigan 48084
1-800-521-9594 8:30 am - 5:00 pm
EMERGENCY PHONE (24 hours) : CHEM TEL 1-800-255-3924

Revised 01/01/17

SAFTEY DATA SHEET

SECTION 1 PRODUCT IDENTIFICATION

TRADE NAME: Williams-Goodco Brick Vents

SECTION 2 Hazardous Identification

Effects of Acute Exposure: Acute exposure to this product is not likely to cause any significant acute toxicological effects

Effects of Chronic Exposure: Crystalline silica is considered a hazard by inhalation. IARC has classified crystalline silica as probably carcinogenic for humans. Crystalline silica is also known to cause silicosis, a noncancerous lung disease caused by excessive exposure to silica. Barium exerts a physiological effect on muscle tissue such as bronchial, skeletal, intestinal, arterial, and especially heart muscle. Barium has been observed to effect the neural tissue and the hematopoietic system. Liver tumors were produced in rats at dose levels of 6000 and 12000ppm DEHP. Further studies have shown that the liver tumors probably arose from the ability of DEHP at high doses in rodents to perturb lipid metabolism, to proliferate peroxisomes, or to increase the rate of cell division. Since non-rodent species (including primates) have been shown to be very resistant to these effects, and since DEHP is not genotoxic, DEHP probably presents a negligible carcinogenic risk to humans at exposure levels typical of occupational or consumer use. Oral doses of DEHP that were high enough to cause toxicity in pregnant animals also produced birth defects in their offspring. High oral doses of DEHP given to male animals produced reduced fertility. However, high doses to humans handling this material are not expected since oral consumption is not a likely route of significant exposure. Because this material does not evaporate readily and is not easily absorbed through the skin, it is not expected to produce such effects in humans through inhalation or skin exposure when handled in a manner consistent with the precautionary measures contained in this material safety data sheet.

SECTION 3 Composition/Information on Ingredients

Hazardous Ingredients	%	Exposure Limit	CAS#	LD/50, Route, Species	LC/50 Route, Species
DI (2-Ethylhexyl) Phthalate (DEHP)	10-30	-	117-81-7	N.A.V	N.A.V
Barium Compounds N.O.S	0.1-1	0.5 MG/M3	-	N.A.V	N.A.V
Crystalline Silica, Quartz	<0.2	0.1 MG/M3	14808-60-7	N.A.V	N.A.V

SECTION 4 **First Aid Measures**

Inhalation: Remove to fresh air. If breathing has stopped, administer artificial respiration and seek medical attention.

Eyes: Flush eyes with abundant water. Forcibly hold eyelids apart to ensure complete irrigation of eyelid tissue. If irritation persists, get medical attention.

Skin: Flush contaminated skin with plenty of water.

Ingestion: Seek medical attention.

SECTION 5 **Fire-fighting Measures**

Flammability: Not flammable

Extinguishing Media: Water, carbon dioxide, dry chemical

Special Procedures: Wear self-contained breathing apparatus and complete personal protective equipment when entering confined areas where potential for exposure to vapors or products of combustion exists. Disperse vapor with water spray. Use water spray to cool fire-exposed containers and structures.

Sensitivity to Static Discharge: May accumulate a static charge which could act as an ignition source

Unusual Fire and Explosion Hazards: Dense black smoke emitted when burned without sufficient oxygen. Products of combustion are toxic.

Hazardous Combustion Products: Carbon monoxide. Carbon dioxide. Hydrogen chloride.

SECTION 6 **ACCIDENTAL RELEASE MEASURE**

Methods for Cleaning Up/ Taking Up: Sweep, shovel, or vacuum spilled resins into a container for reuse or disposal. Prevent runoff into drains, sewers, and other waterways

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SECTION 7 **Handling and Storage**

Storage Conditions: Store in a cool, dry, well ventilated area, away from heat and ignition sources. Store away from incompatible materials.

Handling Procedures: Keep container closed. Ventilate adequately, otherwise wear an appropriate breathing apparatus. Bond and ground transfer containers and equipment to avoid contact with eyes, skin, and clothing. Handle in accordance with good industrial hygiene and safety practices.

SECTION 8 Exposure Controls/Personal Protection

Respiratory Protection: None required under normal operating conditions. If exposure exceeds occupational exposure limits, wear a NIOSH approved respirator.

Protective Gloves: Wear impervious

Eye Protection: Safety glasses. If there is a potential for exposure to particles which could cause mechanical injury to the eye, wear chemical goggles.

Clothing: Wear adequate protective clothing.

Other: Eye bath and safety shower

Additional Information: PVC contains trace amounts of residual VCM (a cancer suspect agent) which may accumulate by vitalization in enclosed bulk rail cars, bulk trucks, storage silos, bag storage areas and in and around blenders or equipment where heat is applied. Vent the air space above the resin. Other areas should be suitably ventilated and monitored for VCM exposure compliance. Suitable respiratory equipment may be required.

SECTION 9 Physical and Chemical Properties

Physical State:	**Specific Gravity (Water = 1):**	**Odor:**
Solid	>1.2	Faint. Characteristic
Evaporation Rate:	**pH:**	**Vapor Density (Air = 1):**
N/A	N/A	N/A
Solubility in Water:	**Boiling Point:**	**Vapor Pressure (MMHG):**
Insoluble	N/A	N/A

SECTION 10 STABILITY AND REACTIVITY

Stability: Product stable under normal conditions

Incompatible Substances: Strong oxidizers

Conditions of Avoid: Do not heat above 200°C to avoid possible release of hydrogen chloride

Hazardous Polymerization: Will not occur

Hazardous Decomposition: Hydrogen chloride gas, carbon monoxide, carbon dioxide

SECTION 11 TOXICOLOGICAL INFORMATION

When used and handled according to specification, the product does not have any harmful effect according to our experience and knowledge

SECTION 12 ECOLOGICAL INFORMATION

Insoluable in water. This material has not been tested for environmental effects.

SECTION 13 DISPOSAL CONSIDERATIONS

Dispose waste according to applicable local, state, and federal regulations

1. Identification of the Substance / Mixture and of the Company

1.1 PRODUCT IDENTIFICATION

Xypex Cementitious Products
Concentrate
Modified
DS-1 & DS-2
C-500 & C-500 NF
Admix C-1000 & C-1000 NF
Admix C-1000 Red
Admix C-2000 & C-2000 NF
Megamix I & Megamix II
FCM 80 (powder component)
Patch'n Plug
RestoraTop 50, 100 & 200

1.2 PRODUCT USE

Waterproofing and protection of concrete

1.3 COMPANY IDENTIFICATION

Xypex Chemical Corporation
13731 Mayfield Place
Richmond, B.C., Canada
Tel: 604-273-5265 or 800-961-4477
Fax: 604-270-0451
E-mail: info@xypex.com
Web: www.xypex.com

1.4 EMERGENCY TELEPHONE NUMBERS

During normal Pacific Standard Time (PST)
800-961-4477 or 604-273-5265
All other times, and in times of unavailability, contact your local emergency services.

2. Hazards Identification

2.1 CLASSIFICATION OF THE MIXTURE

2.1.1 *Classification In Accordance With GHS (5th Edition)*

Skin Irrit. 2: H315	Causes skin irritation.
Eye Dam. 1: H318	Causes serious eye damage.
Skin Sens. 1: H317	May cause an allergic skin reaction.
STOT SE 3: H335	May cause respiratory irritation.
STOT RE 2: H373	May cause damage to respiratory organs through prolonged or repeated exposure.

2.2 LABEL ELEMENTS: in Accordance with GHS (5th Edition)



DANGER

2.3 HAZARD STATEMENTS

H315 Causes skin irritation.
H318 Causes serious eye damage.
H317 May cause an allergic skin reaction.
H335 May cause respiratory irritation.
H373 May cause damage to respiratory organs through prolonged or repeated exposure.

2.4 PRECAUTIONARY STATEMENTS

P280 Wear protective gloves / protective clothing / eye protection / face protection & approved duct masks.
P260 Do not breathe dust.
P264 Wash thoroughly after handling.

2.5 RESPONSIVE PRECAUTIONARY STATEMENTS

P260	Do not breathe dust
P264	Wash thoroughly after handling
P280	Wear protective gloves / protective clothing / eye protection / face protection.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTRE or doctor / physician.
P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

3. Composition / Information on Ingredients

Hazardous Ingredients	%	CAS. No.	Classification According to GHS (5th Edition)
Portland Cement	35 - 60%	65997-15-1	Skin Irrit. 2: H315 Skin Sens. 1: H317 Eye Dam. 1: H318 STOT SE 3: H335
Alkaline Earth Compounds (calcium dihydroxide)	5 - 20%	1305-62-0	Skin Irrit. 2: H315 Eye Dam. 1: H318 STOT SE 3: H335
Silica Sand (< 0.005 % (w/w) 10 µm respirable silica)	30 - 40%	14808-60-7	STOT RE 2: H373

4. First Aid Measures

4.1 DESCRIPTION OF FIRST AID MEASURES

When seeking medical advice take this safety data sheet with you.

INHALATION*:* Remove victim to fresh air and keep at rest in a position comfortable for breathing. Dust in throat and nasal passages should clear spontaneously. If not, irrigate nose and throat with clean water for at least 20 minutes. Seek immediate professional medical attention.

EYE CONTACT: IF IN EYES – Quickly and gently blot away any dry powder. Irrigate cautiously with large amounts of water for at least 60 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Do not rub eyes as this may cause addition irritation or damage. Seek immediate professional medical attention if irritation persists.

SKIN CONTACT: Quickly and gently blot away any dry powder. Under running water, remove contaminated clothing, shoes and leather goods. Continuously flush contaminated area with lukewarm, gently flowing water for at least 60 minutes. If skin irritation or rash occurs, seek medical advice / attention.

INGESTION: Do not induce vomiting. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. If conscious, wash out mouth with clean water. Drink 1 cup (240 - 300 ml) of water followed by dilution with milk if available. Never give anything by mouth if victim is rapidly losing consciousness, unconscious or convulsing. Seek immediate professional medical assistance and contact a poison centre.

4.2 MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED

ACUTE: Irritation to skin and mucous membranes.

DELAYED: Precautions should be taken to ensure that dust is not inhaled; however, long-term exposure to high levels of dust may result in damage to the lungs.

4.3 IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT

Move person to fresh air and away from exposure. Wash and clean eyes or skin as described in 4.1. Ensure eyewash facilities are available.

5. Firefighting Measures

5.1 EXTINGUISHING MEDIA

Xypex Cementitious Products are not flammable and are not subject to explosion.

5.2 SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE

No hazardous combustion products.

Alkaline earth compounds will cause explosive decomposition of maleic anhydride, nitroalkanes and nitroparaffins, in the presence of water, form salts with inorganic salts and with inorganic bases. The dry salts are explosive.

5.3 ADVICE FOR FIREFIGHTERS

No need for specialist protective equipment for firefighters. Prior to using the product liaise with local fire authority for confirmation of best and most current form of firefighting equipment for the product.

6. Accidental Release Measures

6.1 PERSONAL PROTECTIVE MEASURES

Always wear full protective equipment as referred to under Section 8.2.2 to prevent any contamination of skin, eyes, respiratory system and personal clothing. Ensure have adequate measures are in place to prevent airborne dust. Avoid airborne dust generation.

6.2 ENVIRONMENT PROTECTION MEASURES

Do not allow product into drains or water courses. Any spillages into watercourses must be alerted to the Environment Agency or other regulatory body.

6.3 METHODS FOR CLEANING UP

At all times avoid inhalation of product and contact with skin and eyes. Contain the spillage. Keep the material dry if possible. Wear full personal protective equipment when cleaning up, whatever method is chosen. When the product is in a dry state, avoid airborne dust generation when cleaning up. Avoid dry sweeping. Examples of cleanup methods when in dry state are:

(A) Using a vacuum cleaner (Industrial portable units), equipped with high efficiency particulate filters (HEPA filter) or equivalent technique.

(B) Wipe up the dust by mopping, wet brushing or water sprays or hoses with a fine mist to avoid the dust becoming airborne and remove slurry. Ensure drains are covered.

If the product has become wet, clean up and place in watertight container. Allow material to dry and solidify before disposal. Check current regulations before disposing of spillage, whether in dry state or not.

7. Handling & Storage

7.1 HANDLING

Avoid all types of dust generation; particularly the creation of respirable dust. At all times avoid inhalation of product and contact with skin and eyes. Carrying the product may cause back injuries, strains, sprains or the like. Use correct handling techniques to avoid injury. Use handling equipment and controls if necessary to avoid injury. If in doubt, contact your local health and safety body for further guidance on annual handling. Always wear sufficient and full protective equipment and suitable clothing when handling the product. General – During work avoid kneeling in the product. If kneeling is absolutely necessary then appropriate impervious waterproof personal protective equipment must be worn.

Ensure adequate ventilation and have ventilation equipment available if required due to possibility of generation of airborne dust.

Do not eat, drink or smoke when handling or applying product. Remove contaminated clothing and protective equipment before entering eating areas.

Avoid mishandling of pails of bags so as to prevent accidental bursting and creation of dust.

7.2 STORAGE

P402 + P232 + 233 Store in a dry place. Protect from moisture. Keep container tightly closed.

Store this product in a draught free environment, clear of the ground, avoiding humid conditions and extremes of temperature (minimum lower temperature of 7ºC (45ºF). The product should be used within 12 months of the date of production; product should not have been exposed to the atmosphere prior to use.

Any product that is stacked should be done so in a stable manner, and to a safe height. The stacking of product should be done in such a manner that it does not create any risk of product falling and accidentally bursting the packaging open.

This product contains Portland cement and thus Chromium (VI) and may produce an allergic reaction. The cement in this product may contain a reducing agent; the effectiveness of the reducing agent reduces with time.

8. Exposure Control / Personal Protection

8.1 CONTROL PARAMETERS

P260 Do not breathe dust.

P401 Store in original containers.

Substance	CAS No	Regulatory Limits			Recommended Limits	
		OSHA PEL		Cal/OSHA PEL (as of 4/26/13)	NIOSH REL (as of 4/26/13)	ACGIH 2015 TLV
		ppm	mg/m	8-hour TWA (ST) STEL (C) Ceiling	Up to 10-hour TWA (ST) STEL (C) Ceiling	8-hour TWA (ST) STEL (C) Ceiling
Calcium hydroxide	1305-62-0					
Total dust			15	5 mg/m^3	5 mg/m^3	5 mg/m^3
Respirable fraction			5			
Portland cement	65997-15-1					
Total dust			15	10 mg/m^3	10 mg/m^3	
Respirable fraction			5	5 mg/m^3	5 mg/m^3	1 mg/m (no asbestos and < 1% crystalline silica)
Silica: Crystalline	14808-60-7					0.025 (resp.) for a-quartz and cristobalite mg/m^3
Quartz (Respirable)		250(h) (%SiO_2+5)	10 mg/m (%SiO_2+2)	0.1 mg/m^3	Ca 0.05 mg/m^3	
Quartz (Total Dust)			30 mg/m (%SiO_2+2)			

Please refer to OSHA website for additional information.
Please note that the % of respirable crystalline silica in the silica sand is < 0.005 % but some processes and uses may increase this fraction.

8.2 EXPOSURE CONTROLS

8.2.1 *Appropriate Engineering Controls*

Provide adequate and suitable ventilation / ventilation equipment when handling product, to maintain dust below OES. All ventilation systems should be filtered before discharge to atmosphere. Isolate personnel from dusty areas.

Do not eat, drink or smoke when working with the product to avoid contact with skin or mouth. Immediately after working with the product, workers should wash or shower or use skin moisturizers. Remove contaminated clothing, footwear, watches, etc… and clean thoroughly before re-using.

8.2.2 *Personal Protection Equipment*

P280	Wear protective gloves / protective clothing / eye protection / face protection.
P264	Wash hands thoroughly after handling.
P272	Contaminated work clothing should not be allowed out of the workplace.

Skin Protection – Use impervious, abrasion and alkali resistant gloves, enclosed rubber boots that resist powder and liquid penetration, closed long-sleeved impervious protective clothing that protects skin from contact. Close all fittings at opening.

Eye Protection – Wear safety goggles / glasses at all times when handling the product. Ensure the goggles / glasses have suitable side protection, are wide vision, and that there is no risk of product particles being able to enter the eye(s).

Respiratory Protection – Always use respiratory protection. Inhalation of product dust must be avoided at all times. Use an APPROVED NIOSH dust mask. Respiratory protective equipment must be in compliance with relevant national legislation. It is good practice to conduct fit-testing when selecting respiratory protective equipment.

Additional safety precautions may include the provision a shower facility.

8.2.3 *Environmental Exposure Controls*
According to available technology that limit dust dispersion into the environment.

9. Physical & Chemical Properties

9.1 INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Grey particulate powder
Odour	None
pH	pH 9.1 – 9.8 (EPA method 2 parts water to 1 part powder by volume weight)
Melting / Freezing Point	Not applicable
Initial Boiling Point and Range	Not applicable
Flash Point	Not applicable
Evaporation Rate	Not applicable
Flammability Upper / Lower flammability / Explosive Limits	Not applicable
Vapour Pressure	Not applicable
Vapour Density	Not applicable
Solubility	Powder forms slurry with water, hardens over time
Auto-ignition Temperature	Not applicable
Decomposition Temperature	Alkaline earth compounds: 580ºC
Viscosity	Not applicable
Explosive Properties	Not applicable
Oxidizing Properties	Not applicable
Specific Gravity	2.0 to 2.8 (water = 1)

10. Stability & Reactivity

10.1 REACTIVITY

Alkaline earth compounds react vigorously with strong acids. They also attack aluminum, lead and brass in the presence of moisture.

In the presence of water, calcium aluminates react chemically and harden to form stable calcium aluminate hydrates. This reaction is exo-thermal and may last up to 24 hours. The total heat released is < 500 kj/kg.

10.2 CHEMICAL STABILITY

The product is chemically stable. When mixed with water it will harden, with time, into a stable mass. Products may liberate Carbon Monoxide or Carbon Dioxide.

10.3 POSSIBILITY OF HAZARDOUS REACTIONS

Alkaline earth compounds will cause explosive decomposition of maleic anhydride, nitroalkanes and nitroparaffins, in the presence of water, form salts with inorganic salts and with inorganic bases. The dry salts are explosive.

Alkaline earth compound is stable up to 580ºC. Alkaline earth compounds decompose with loss of water at approximately 580ºC to form Calcium Oxide.

10.4 CONDITIONS TO AVOID

Avoid humid and drafty environments during storage. Also avoid storage temperatures below 7ºC.

10.5 INCOMPATIBLE MATERIALS

Products are incompatible with strong acids.

It should be noted that the uncontrolled use of aluminum powder in wet cement should be avoided as hydrogen is produced.

10.6 HAZARDOUS DECOMPOSITION PRODUCTS

None known.

11. Toxicological Information

11.1 INFORMATION ON TOXICOLOGICAL EFFECTS

Acute Dermal Toxicity: The cement incorporated with the other ingredients in this product has been subject to a Limit test. (Limit test, rabbit, 24 hours contact, 2,000 mg/kg body weight – no lethality.) Calcium dihydroxide is not acutely toxic. Rabbit dermal LD50 > 2,500 mg/kg/bw.

Acute Oral Toxicity: May cause irritation to the gastrointestinal tract. Calcium dihydroxide is not acutely toxic. Rat oral LD50 > 2,000 mg/kg/bw.

Acute Inhalation Toxicity: The product may irritate the throat and respiratory tract. Inhalation may lead to irritation, inflammation or burns. Coughing, sneezing and shortness of breath may occur following exposures in excess of occupational exposure limits.

Skin Corrosion / Irritation: When skin is exposed to the product in its dry or wet state, thickening, cracking or fissuring of the skin may occur. Prolonged contact in combination with abrasion can cause severe burns.

Portland cement and alkaline earth compound are an irritant to skin. Ingredients are dermal irritants and dermatitis may develop following exposure.

Cement may have an irritating effect on moist skin (due to transpiration of humidity) after prolonged contact. Prolonged skin contact with wet cement or fresh concrete may cause serious burns because they develop without pain being felt. Repeated skin contact with wet cement may cause dermatitis.

This mixture contains < 2 ppm Chromium (VI), which is a skin irritant.

Serious Eye Damage / Irritation: Direct contact with product may cause corneal damage by mechanical stress, immediate or delayed irritation or inflammation. Direct contact either in dry or wet form may cause effects ranging from moderate eye irritation (eg. conjunctivitis or blepharitis) to chemical burns or blindness.

Skin Sensitization: This product contains Portland cement which is classified as a skin sensitizer.

Contact Dermatitis / Sensitizing Effects: Prolonged and repeated skin contact with Alkaline earth products may cause dermatitis.

Some individuals may exhibit eczema upon exposure to wet cementitious products, caused either by the high pH which induces irritant contact dermatitis, or by an immunological reaction to soluble Cr (VI) which elicits allergic contact dermatitis. The response may appear in a variety of forms ranging from a mild rash to severe dermatitis and is a combination of those two mechanisms. An exact diagnosis is often difficult to assess.

Germ Cell Mutagnicity: With the exception of Chromium (VI) (< 2 ppm) in the Portland cement, none of the individual substances in this mixture are classified as mutagenic.

Carcinogenicity: This product contains silica sand and this form of silica is not classified as carcinogenic due to its large particle size. However, prolonged and / or massive exposure to respirable crystalline silica-containing dust may cause silicosis, a nodular pulmonary fibrosis caused by deposition in the lungs of fine respirable particles of crystalline silica.

In 1997, IARC (the International Agency for Research on Cancer) concluded that crystalline silica inhaled from occupational sources can cause lung cancer in humans. However it pointed out that not all industrial circumstances, nor all crystalline silica types, were to be incriminated.

IARC (1997) has concluded that there is 'sufficient evidence for the carcinogenicity of inhaled crystalline silica in the form of quartz and cristobalite in certain industrial circumstances, but that the carcinogenicity may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity or distribution of polymorphs'.

Principle symptoms of lung fibrosis (commonly referred to as silicosis) are cough and breathlessness. Occupational exposure to respirable dust and respirable crystalline silica dust should be monitored and controlled.

Reproductive Toxicity: None of the individual substances in this mixture are classified as reproductive toxicants.

S*pecific Target Organ Toxicity – Single Exposure:* Inhalation of dust can result in damage to the respiratory tract.

Specific Target Organ Toxicity – Repeat Exposure: Prolonged or repeated inhalation exposure may cause damage to the lungs, including chronic obstructive pulmonary disease (COPD).

Certain ingredients within these products do give potential for generation of respirable dust during handling and use. The dust may contain respirable crystalline silica.

Prolonged or frequent or excessive exposure to respirable crystalline silica dust, cement dust and alkaline earth products may cause respiratory disease, lung disease, lung and respiratory tract damage, ulceration and perforation of the nasal septum, pneumonitis and other serious bad health effects.

The excessive inhalation of crystalline silica dust may result in respiratory disease, including silicosis, pneumoconiosis and pulmonary fibrosis.

11.2 ASPIRATION HAZARD

No data available.

11.3 LIKELY ROUTES OF EXPOSURE

Inhalation: YES
Skin – Eyes: YES
Ingestion: NO – except in accidental cases

11.4 POTENTIAL HEALTH EFFECTS

The product may irritate and burn the throat and respiratory tract. Coughing, sneezing and shortness of breath may occur following exposures in excess of occupational exposure limits. Causes skin irritation and is a severe eye irritant.

Chronic exposure to respirable dust in excess of occupational exposure limits may cause coughing, shortness of breath and may cause chronic obstructive lung disease (COPD).

11.5 MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

Inhaling dust may aggravate existing respiratory system disease(s) and / or medical conditions such as emphysema or asthma and / or existing skin and / or eye conditions.

12. Ecological Information

12.1 ECOTOXICITY

Do not allow the material to enter water course. If water is contaminated inform the relevant authorities immediately. The addition of a significant amount of cementitious products to water may cause a rise in the pH value and therefore may be toxic to aquatic life under certain circumstances.

Alkaline conditions may also have effects on vegetation.

The following toxicity values are available for calcium dihydroxide:
LC50 (96h) for freshwater / marine fish: 50.6 mg/l and 457 mg/l
EC50 (48h) for freshwater invertebrates: 49.1 mg/l
LD50 (96h) for marine water invertebrates: 158 mg/l
EC50 (72h) for freshwater algae: 184.57 mg/l and the NOEC is 48 mg/l
NOEC (14d) for marine water invertebrates: 32 mg/l
EC10/LC10 or NOEC for soil macro-organisms: 2,000 mg/kg soil dw and for micro-organisms is 12,000 mg/kg/ soil dw
NOEC (21d) for terrestrial plants: 1,080 mg/kg

12.2 PERSISTENCE AND DEGRADABILITY

Alkaline earth material is non bio-degradable; it reacts with atmosphere and dissolved carbon dioxide to form calcium carbonate (chalk).

12.3 BIO ACCUMULATIVE POTENTIAL

None of the substances in this mixture are known to bioaccumulate.

12.4 MOBILITY IN SOIL

Not known.

12.5 RESULTS OF PBT AND VPVB ASSESSMENT

This mixture does not contain any substances that are assessed to be PBT or vPvB.

13. Disposal Considerations

13.1 WASTE TREATMENT METHODS

Avoid creation of airborne and respirable dust when disposing of product.

Product – Unused Residue or Dry Spillage
Pick up dry and put in containers. Mark container clearly. In case of disposal, harden with water to avoid dust creation. Dispose of at a licensed waste facility accepting cementitious and alkaline earth based waste. Dispose of all materials in accordance with current local regulations / legislation.

Product – Slurries
Allow to harden. Avoid entry into sewage and drainage systems or into bodies of water and dispose of as indicated for hardened product.

Product – After Addition of Water, Hardened
Dispose of at a licensed waste facility accepting cementitious and alkaline earth based waste. Dispose of all materials in accordance with current regulations / legislation. Avoid entry into sewage and drainage systems or into bodies of water.

13.2 PACKAGING

Completely empty packaging and process it according to current regulations / legislation.

14. Transportation Information

The product is not classified as hazardous for transport purposes.

15. Regulatory Information

GHS
WHMIS
OSHA

16. Other Information

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS	Chemical Abstract Service Number
OEL	Occupational Exposure Limit
TWA	Time Weighted Averages
PEL	Permissible Exposure Limit
MEL	Maximum Exposure Limit
LC	Lethal Concentration
LD	Lethal Dose
UEL	Upper Explosion Limit
LEL	Lower Explosion Limit
PPE	Personal Protective Equipment
EC50	Median effective concentration
LC50	Median lethal concentration
LD50	Median lethal dose
NOEC	No observable effect concentration
WHMIS	Workplace Hazardous Materials Information System

Hazard Statements In Full

H315	Causes skin irritation.
H318	Causes serious eye damage.
H317	May cause an allergic skin reaction.
H335	May cause respiratory irritation.
H373	May cause damage to respiratory organs through prolonged or repeated exposure.

Precautionary Statements In Full

P260	Do not breathe dust.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves / protective clothing / eye protection / face protection.
P272	Contaminated work clothing should not be allowed out of the workplace.
P264	Wash … thoroughly after handling.

Responsive Precautionary Statements

P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTRE or doctor / physician.
P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P332+ P313	If skin irritation or rash occurs: Get medical advice / attention.
P362	Take off contaminated clothing and wash before reuse.
P501	Dispose of contents / container to …
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P314	Get medical advice / attention if you feel unwell.

Revisions Date: May 31, 2015 / Rev. No. 1

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MATERIAL SAFETY DATA SHEET

Product Name: XYPEX CONCENTRATE
XYPEX MODIFIED
XYPEX CONCENTRATE DS-1, DS-2
XYPEX PATCH'N PLUG

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name: XYPEX CONCENTRATE, XYPEX MODIFIED
XYPEX CONCENTRATE DS1, DS2, XYPEX PATCH'N PLUG
Recommended use: Waterproofing and protection of concrete.
Company Name: Concrete Waterproofing Manufacturing Pty. Ltd,
T/A Xypex Australia (ABN 96 093 161 963)
Address: 45 Union Road, Post Office Box 255, LAVINGTON
NSW 2641
Emergency Tel. 02 6040 2444 A/h 0418 214 158

2. HAZARD IDENTIFICATION

Classified as hazardous according to the NOHSC criteria
Not classified as a dangerous goods by the criteria of the ADG Code

Risk Phrases: R/36,37,38 Irritating to eyes, respiratory system and skin
R/41 Risk of serious damage to eyes.
R/43 May cause sensitisation by skin contact.
Safety Phrases: S/22 Do not breathe dust.
S/24/25 Avoid contact with the skin and eyes.
S/26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S37/S39 Wear suitable gloves and eye / face protection.

3. COMPOSITION /INFORMATION ON INGREDIENTS

Ingredients:	Name	CAS	Proportion
	Portland cement	65997-15-1	30-60%
	Alkaline Earth Compound	1317-65-3	10-<30%
	Silica Sand (graded)	14808-60-7	30-60%
	Calcium Aluminates	-	<10%

4. FIRST AID MEASURES

Eye contact: Quickly and gently blot or brush away any dry powder
Irrigate with large amounts of water for at least 15-20 minutes.
Seek immediate medical attention.
Skin Contact: Continuously flush contaminated area with lukewarm, gently flowing water for at least 15-20 minutes. Remove contaminated clothing and wash before reuse or discard. If symptoms develop seek immediate medical attention.
Inhalation: Remove person to fresh air and seek immediate medical attention.
Oral ingestion: Wash out mouth with water and drink one cup (240-300ml) of water followed by diluted milk if available. Do not induce vomiting. If vomiting does occur, have victim lean forward to reduce the risk to aspiration. Never give anything by mouth if victim is rapidly losing consciousness, is unconscious or convulsing. Seek immediate medical attention.

5. FIRE FIGHTING MEASURES

Extinguishing Media: Not applicable **-** Product is non-combustible.
Specific Hazards: In contact with extinguishing water, an alkaline solution is produced which can cause irritation.
Precautions for Fire-Fighters: Fire fighters should wear full protective clothing and self contained breathing apparatus.
Hazchem Code: Not applicable.

6. ACCIDENTAL RELEASE MEASURES

Emergency Procedures: Prevent spillage from entering storm water and sewer drains.
Methods and materials for containment and clean up: Use dry clean up procedures and avoid generating dust. Increase ventilation and wear full protective clothing and sufficient respiratory protection.
Vacuum device or shovel suitable for clean up. Place waste material in plastic or metal drums with tightly sealed lids for disposal.

7. HANDLING AND STORAGE

Handling: Limit all unnecessary personal contact. Wear protective clothing when risk of exposure occurs. Use in well ventilated area and avoid contact with incompatible materials.
Storage: Product should be stored in dry, moderate environment, and protected from water or cold damage. Store away from foodstuff containers. Keep in sealed containers until product is required.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure standards: TWA 10 mg/m³ Portland Cement Total Dust
TLV – TWA 5 mg/m³ Alkaline Earth Compound
TLV – TWA 0.1mg/m³ (respirable)
Recommendation: Keep exposure to dust as low as practicable, respirable crystalline silica should be kept below 0.1mg/m³ TWA.
Other information relating to exposure: Cement products may contain crystalline silica as an impurity. Worksafe Australia has yet to classify crystalline silica as a human carcinogen.
Repeated exposed to respirable crystalline silica dust may lead to silicosis, a serious lung disease. The onset of silicosis is usually slow and lung damage may occur even when no symptoms or signs of ill health have occurred.
Exposure to respirable crystalline silica dust contained in the product must be prevented to avoid risk of lung disease.
Eng. Controls: Use in well ventilated areas. Maintain air concentrations below exposure standards.
Personal Protective It is recommended that the user wear rubber gloves, a class P1 or P2 particulate respirator or equivalent dust mask, fitted correctly, tight fitting safety goggles, and impervious full length clothing that protects the skin from contact.
Additional safety precautions may include, eyewash station, shower facility, and ventilation sufficient in volume and distribution to maintain dust exposure below the 10 mg/m³ level.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Solid
Odour and appearance:	Odourless grey colour
PH Value	10-13
Specific Gravity	2.8 –3.0
Boiling/melting point:	>1200ºC
Vapour pressure:	Not applicable
Vapour density:	Not applicable
Solubility:	2.0g/L
VOC Content:	None
Flash Point:	Not applicable
Flammability	Not applicable
Other properties	Non explosive

10. STABILITY AND REACTIVITY

Chemical Stability: Products are chemically stable.
Conditions to avoid: Protect from water and cold damage.
Incompatible materials: Products are incompatible with strong acids.
Hazardous decomposition: Products will not decompose into hazardous by-products and it will not polymerise.
Hazardous reactions: Contact with water should be avoided. Wet Portland cement is alkaline.

11. TOXICOLOGICAL INFORMATION

Toxicology Information: No toxicity data is available for these specific products

Effects of Acute(short term) exposure to products: Ingredients in the products are dermal irritants and dermatitis may develop following exposure. Ingredients may also irritate or cause burning sensation to eyes, nose and throat and may cause abdominal discomfort. Eye burns can result from exposure and may cause permanent corneal damage.

Effects of Chronic (long term) exposure to products: Exposure to dust can cause perforation of the nasal septum. Prolonged exposed to ingredients in these products can cause lung and respiratory damage.
Portland cement and Alkaline earth compound are corrosive to the skin, chromium sensitisation may cause development of allergic dermatitis.
Excess inhalation of crystalline silica dust may result in respiratory disease, including Silicosis, pneumoconiosis and pulmonary fibrosis. Studies have shown that smoking increases the risk of silicosis and other lung disease including lung cancer in persons exposed to crystalline silica.

12. ECOLOGICAL INFORMATION

Environ. Protection:	Not expected to create environmental hazard unless dumped in massive quantities.
Mobility:	Not available
Persistence/ Degradability:	Not available
Mobility:	Not available
Ecotoxicity:	Not available

13. DISPOSAL CONSIDERATIONS

Disposal Procedures:	Can be disposed of as common waste. Disposal should be in accordance with local, state and federal regulations.
Special precautions For landfill and Incineration:	Non required

14. TRANSPORT INFORMATION

	Not classified as Dangerous Goods according to the Australian Code for the transport of Dangerous Goods by Road and Rail.
UN Number:	Non allocated
UN Proper shipping name:	Non allocated
Class and subsidiary risk:	Not applicable
Packing Group:	Not applicable
Special precautions for user:	No restrictions known for transport procedures.
Hazchem Code:	None allocated

15. REGULATORY INFORMATION

Poisons schedule:	None allocated
Hazard Category:	Irritant

16. OTHER INFORMATION

MSDS prepared by the Technical Services Department: Revised February 2014.

The information in this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process. The information given is based on technical data that we believe to be reliable at the time of issuing the MSDS. Because conditions of use are outside our control, it is the responsibility of the user to verify safety data for combinations with other materials, or for the use in specific processes, and to verify waste disposal requirements.

29 CFR 1910.1200 (OSHA HazCom 2012)

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product identifier

Trade name : ZEREX™ ORIGINAL Antifreeze Coolant

Relevant identified uses of the substance or mixture and uses advised against

Recommended use : Coolant and antifreeze.

Details of the supplier of the safety data sheet	**Emergency telephone number**
Valvoline LLC 100 Valvoline Way Lexington, KY 40509 United States of America (USA) 1-800-TEAMVAL (1-800-832-6825)	1-800-VALVOLINE (1-800-825-8654) **Regulatory Information Number** 1-800-TEAMVAL (1-800-832-6825) **Product Information** 1-800-TEAMVAL (1-800-832-6825)

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Acute toxicity (Oral) : Category 4

Reproductive toxicity : Category 1B

Specific target organ systemic toxicity - repeated exposure (Oral) : Category 2 (Kidney, Liver)

GHS label elements

Hazard pictograms :



Signal Word : Danger

Hazard Statements : Harmful if swallowed.
May damage fertility or the unborn child.
May cause damage to organs (Kidney, Liver) through prolonged or repeated exposure if swallowed.

Precautionary Statements : **Prevention:**

Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.
Wash skin thoroughly after handling.
Do not eat, drink or smoke when using this product.
Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response:
IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.
IF exposed or concerned: Get medical advice/ attention.
Storage:
Store locked up.
Disposal:
Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous components

Chemical name	CAS-No.	Classification	Concentration (%)
ETHYLENE GLYCOL	107-21-1	Acute Tox. 4; H302 STOT RE 2; H373	95.7212
DIETHYLENE GLYCOL	111-46-6	Acute Tox. 4; H302 STOT RE 2; H373	4.7852
DISODIUM TETRABORATE ANHYDROUS	1330-43-4	Repr. 1B; H360	0.5018

SECTION 4. FIRST AID MEASURES

General advice : Move out of dangerous area.
Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended.

If inhaled : If unconscious, place in recovery position and seek medical

advice.
If symptoms persist, call a physician.

In case of skin contact : First aid is not normally required. However, it is recommended that exposed areas be cleaned by washing with soap and water.

In case of eye contact : Flush eyes with water as a precaution.
Remove contact lenses.
Protect unharmed eye.
If eye irritation persists, consult a specialist.

If swallowed : Obtain medical attention.
Rinse mouth with water.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.

Most important symptoms and effects, both acute and delayed : Effects of acute ethylene glycol poisoning appear in three fairly distinct stages. The initial stage occurs shortly after exposure, lasts 6-12 hours, and is characterized by central nervous system effects (transient exhilaration, nausea, vomiting, and in severe cases, coma, convulsions, and possible death). The second stage lasts from 12-36 hours after exposure and is initiated by the onset of coma. This phase is characterized by tachypnia, tachycardia, mild hypotension, cyanosis, and in severe cases, pulmonary edema, bronchopneumonia, cardiac enlargement, and congestive failure. The final stage occurs 24-72 post-exposure and is characterized by renal failure, ranging from a mild increase in blood urea nitrogen and creatinine followed by recovery, to complete anuria with acute tubular necrosis that can lead to death. Oxaluria is found in most cases. The most significant laboratory finding in ethylene glycol intoxication is severe metabolic acidosis.

Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include:
stomach or intestinal upset (nausea, vomiting, diarrhea)
irritation (nose, throat, airways)
Cough
pain in the abdomen and lower back
cyanosis (causes blue coloring of the skin and nails from lack of oxygen)
lung edema (fluid buildup in the lung tissue)
acute kidney failure (sudden slowing or stopping of urine production)
Convulsions
Harmful if swallowed.

May damage fertility or the unborn child.

Notes to physician : This product contains ethylene glycol. Ethanol decreases the metabolism of ethylene glycol to toxic metabolites. Ethanol should be administered as soon as possible in cases of severe poisoning since the elimination half-life of ethylene glycol is 3 hours. If medical care will be delayed several hours, give the patient three to four 1-ounce oral "shots" of 86-proof or higher whiskey before or during transport to the hospital. Fomepizole (4-methylpyrazole) is an effective antagonist of alcohol dehydrogenase, and as such, may be used as an antidote in the treatment of ethylene glycol poisoning. Hemodialysis effectively removes ethylene glycol and its metabolites from the body.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Water spray
Foam
Carbon dioxide (CO2)
Dry chemical

Unsuitable extinguishing media : High volume water jet

Specific hazards during firefighting : Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous combustion products : Alcohols
Aldehydes
carbon dioxide and carbon monoxide
ethers
toxic fumes
Hydrocarbons

Specific extinguishing methods :

Product is compatible with standard fire-fighting agents.

Further information : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Use personal protective equipment. Ensure adequate ventilation. Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.
Environmental precautions	:	Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.
Methods and materials for containment and cleaning up	:	Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal.
Other information	:	Comply with all applicable federal, state, and local regulations.

SECTION 7. HANDLING AND STORAGE

Advice on safe handling	:	Do not breathe vapours/dust. Do not smoke. Container hazardous when empty. Avoid exposure - obtain special instructions before use. Avoid contact with skin and eyes. Smoking, eating and drinking should be prohibited in the application area. For personal protection see section 8. Dispose of rinse water in accordance with local and national regulations.
Conditions for safe storage	:	Keep container tightly closed in a dry and well-ventilated place. Observe label precautions.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
ETHYLENE GLYCOL	107-21-1	C	100 mg/m3 Aerosol only	ACGIH
		C	50 ppm	OSHA P0

			125 mg/m3	
		C	40 ppm 100 mg/m3 Vapour	CAL PEL
DIETHYLENE GLYCOL	111-46-6	TWA	10 mg/m3	US WEEL
DISODIUM TETRABORATE ANHYDROUS	1330-43-4	TWA	1 mg/m3	NIOSH REL
		PEL	5 mg/m3	CAL PEL
		TWA	10 mg/m3	OSHA P0
		TWA	2 mg/m3 Inhalable fraction (Borate)	ACGIH
		STEL	6 mg/m3 Inhalable fraction (Borate)	ACGIH

Hazardous components without workplace control parameters

Components	CAS-No.
DISODIUM TETRABORATE ANHYDROUS	1330-43-4

Engineering measures : Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

Personal protective equipment

Respiratory protection : In the case of vapour formation use a respirator with an approved filter.

A NIOSH-approved air-purifying respirator with an appropriate cartridge and/or filter may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits (if applicable) or if overexposure has otherwise been determined. Protection provided by air-purifying respirators is limited. Use a positive pressure, air-supplied respirator if there is any potential for uncontrolled release, exposure levels are not known or any other circumstances where an air-purifying respirator may not provide adequate protection.

Hand protection
Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye protection : Not required under normal conditions of use. Wear splash-proof safety goggles if material could be misted or splashed into eyes.

Skin and body protection : Wear as appropriate:
Impervious clothing

		Safety shoes Choose body protection according to the amount and concentration of the dangerous substance at the work place. Wear resistant gloves (consult your safety equipment supplier).
Hygiene measures	:	Wash hands before breaks and at the end of workday. When using do not eat or drink. When using do not smoke.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	:	liquid
Colour	:	green
Odour	:	No data available
Odour Threshold	:	No data available
pH	:	9 - < 11
Melting point/freezing point	:	No data available
Boiling point/boiling range	:	387.7 °F / 197.6 °C (1,013.232 hPa) Calculated Phase Transition Liquid/Gas
Flash point	:	> 232 °F / > 111 °C
Evaporation rate	:	No data available
Flammability (solid, gas)	:	No data available
Upper explosion limit	:	15.3 %(V) GLP: Calculated Explosive Limit
Lower explosion limit	:	3.2 %(V) GLP: Calculated Explosive Limit
Vapour pressure	:	0.12265 hPa (25 °C) Calculated Vapor Pressure
Relative vapour density	:	No data available
Relative density	:	No data available
Density	:	1.1205 g/cm3 (15.6 °C)

Solubility(ies)		
Water solubility	:	No data available
Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Thermal decomposition	:	No data available
Viscosity		
Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	No data available
Oxidizing properties	:	No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	No decomposition if stored and applied as directed.
Chemical stability	:	Stable under recommended storage conditions.
Possibility of hazardous reactions	:	Product will not undergo hazardous polymerization.
Conditions to avoid	:	excessive heat
Incompatible materials	:	Acids Aldehydes Alkali metals Alkaline earth metals Bases strong alkalis Strong oxidizing agents Sulphur compounds
Hazardous decomposition products		Alcohols Aldehydes carbon dioxide and carbon monoxide ethers Hydrocarbons Organic acids ketones

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure	:	Inhalation Skin contact Eye Contact Ingestion

Acute toxicity
Harmful if swallowed.
Product:

Acute oral toxicity	:	Remarks: Ingestion of medications contaminated with diethylene glycol has caused kidney failure and death in humans. Products containing diethylene glycol should be considered toxic by ingestion.
Acute dermal toxicity	:	Remarks: Skin absorption of this material (or a component) may be increased through injured skin.

Components:
ETHYLENE GLYCOL**:**

Acute oral toxicity	:	LD0 (Human): Estimated 1.56 g/kg Assessment: The component/mixture is classified as acute oral toxicity, category 4.
Acute inhalation toxicity	:	LC50 (Rat): 10.9 mg/l Exposure time: 1 h Test atmosphere: dust/mist Assessment: No adverse effect has been observed in acute inhalation toxicity tests.
Acute dermal toxicity	:	LD50 (Rabbit): 9,530 mg/kg
Acute toxicity (other routes of administration)	:	LD50 (Rat): 5,010 mg/kg Application Route: Intraperitoneal

DIETHYLENE GLYCOL**:**

Acute oral toxicity	:	LD50 (Human): Expected 1,120 mg/kg Target Organs: Kidney
Acute inhalation toxicity	:	LC50 (Rat): > 4.6 mg/l Exposure time: 4 h Test atmosphere: dust/mist Assessment: No adverse effect has been observed in acute inhalation toxicity tests.
Acute dermal toxicity	:	LD50 (Rabbit): 13,300 mg/kg

DISODIUM TETRABORATE ANHYDROUS**:**

Acute inhalation toxicity	:	LC50 (Rat): > 2.03 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: OECD Test Guideline 403 Assessment: No adverse effect has been observed in acute inhalation toxicity tests.
Acute dermal toxicity	:	LD50 (Rabbit): > 2,000 mg/kg Assessment: No adverse effect has been observed in acute dermal toxicity tests.

Skin corrosion/irritation
Not classified based on available information.
Components:
ETHYLENE GLYCOL**:**
Species: Rabbit
Result: No skin irritation

DIETHYLENE GLYCOL**:**
Species: Human
Result: Slight, transient irritation

DISODIUM TETRABORATE ANHYDROUS**:**
Species: Rabbit
Result: No skin irritation

Serious eye damage/eye irritation
Not classified based on available information.
Product:
Remarks: Unlikely to cause eye irritation or injury.

Components:
ETHYLENE GLYCOL**:**
Result: Slight, transient irritation

DIETHYLENE GLYCOL**:**
Species: Rabbit
Result: Slight, transient irritation

DISODIUM TETRABORATE ANHYDROUS**:**
Result: Slight, transient irritation

Respiratory or skin sensitisation
Skin sensitisation: Not classified based on available information.
Respiratory sensitisation: Not classified based on available information.
Components:
ETHYLENE GLYCOL**:**
Test Type: Maximisation Test
Species: Guinea pig
Assessment: Does not cause skin sensitisation.

DIETHYLENE GLYCOL**:**
Test Type: Maximisation Test
Species: Guinea pig
Method: Directive 67/548/EEC, Annex V, B.6.
Result: Did not cause sensitisation on laboratory animals.

DISODIUM TETRABORATE ANHYDROUS**:**
Test Type: Buehler Test
Species: Guinea pig
Assessment: Does not cause skin sensitisation.
Method: OECD Test Guideline 406

Germ cell mutagenicity
Not classified based on available information.
Components:
ETHYLENE GLYCOL**:**
Genotoxicity in vitro : Test Type: Ames test
Test species: Salmonella typhimurium
Metabolic activation: with and without metabolic activation
Result: negative

DIETHYLENE GLYCOL**:**
Genotoxicity in vitro : Test Type: Ames test
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative
GLP: yes

: Test species: Chinese hamster ovary cells
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 479
Result: negative
GLP: yes

Genotoxicity in vivo : Test Type: In vivo micronucleus test
Test species: Mouse
Method: OECD Test Guideline 474
Result: negative
GLP: yes

Carcinogenicity
Not classified based on available information.
Reproductive toxicity
May damage fertility or the unborn child.
Components:
DISODIUM TETRABORATE ANHYDROUS**:**
Reproductive toxicity - Assessment : Clear evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments

STOT - single exposure
Not classified based on available information.
STOT - repeated exposure
Not classified based on available information.
Components:
ETHYLENE GLYCOL**:**
Exposure routes: Ingestion
Target Organs: Kidney, Liver
Assessment: May cause damage to organs through prolonged or repeated exposure.

DIETHYLENE GLYCOL**:**
Exposure routes: Ingestion
Target Organs: Kidney
Assessment: May cause damage to organs through prolonged or repeated exposure.

Aspiration toxicity
Not classified based on available information.
Experience with human exposure
Components:
DIETHYLENE GLYCOL**:**
Liver
Further information
Product:
Remarks: No data available

Carcinogenicity:

IARC	Group 2A: Probably carcinogenic to humans	
	SODIUM NITRATE	7631-99-4
OSHA	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.	
NTP	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.	

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity
Product:
Ecotoxicology Assessment
Acute aquatic toxicity : Not classified based on available information.

Chronic aquatic toxicity : Not classified based on available information.

Components:
ETHYLENE GLYCOL**:**

Toxicity to fish	:	LC50 (Lepomis macrochirus (Bluegill sunfish)): 27,540 mg/l Exposure time: 96 h Test Type: static test LC50 (Pimephales promelas (fathead minnow)): 8,050 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	LC50 (Daphnia magna (Water flea)): > 10,000 mg/l Exposure time: 48 h Test Type: static test
Toxicity to algae	:	EC50 (Pseudokirchneriella subcapitata (green algae)): 6,500 - 13,000 mg/l End point: Growth inhibition Exposure time: 7 Days
Toxicity to fish (Chronic toxicity)	:	NOEC (Pimephales promelas (fathead minnow)): 32,000 mg/l Exposure time: 7 d
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC (Daphnia magna (Water flea)): 24,000 mg/l Exposure time: 7 d

DIETHYLENE GLYCOL**:**

Toxicity to daphnia and other aquatic invertebrates	:	LC50 (Water flea (Daphnia magna)): > 10,000 mg/l Exposure time: 24 h Test Type: static test Method: DIN 38412

DISODIUM TETRABORATE ANHYDROUS**:**

Toxicity to fish	:	LC50 (Pimephales promelas (fathead minnow)): 79.7 mg/l Exposure time: 96 h Remarks: Information refers to the main component.
Toxicity to algae	:	NOEC (Pseudokirchneriella subcapitata (green algae)): 17.5 mg/l End point: Growth inhibition Exposure time: 72 h Test Type: static test Method: OECD Test Guideline 201 Remarks: Information refers to the main component.
Toxicity to fish (Chronic toxicity)	:	NOEC (Danio rerio (zebra fish)): 5.6 mg/l Exposure time: 34 d Test Type: semi-static test Method: OECD Test Guideline 210 Remarks: Information refers to the main component.

Persistence and degradability
Components:
ETHYLENE GLYCOL**:**

Biodegradability : Result: Readily biodegradable.
Biodegradation: 90 - 100 %
Exposure time: 10 d
Method: OECD Test Guideline 301

DIETHYLENE GLYCOL**:**
Biodegradability : Result: Readily biodegradable.
Biodegradation: 70 - 80 %
Exposure time: 28 d
Method: OECD Test Guideline 301B

DISODIUM TETRABORATE ANHYDROUS**:**
Biodegradability : Result: The methods for determining biodegradability are not applicable to inorganic substances.

No data available

Bioaccumulative potential

Components:

ETHYLENE GLYCOL**:**
Bioaccumulation : Species: Crayfish (Procambarus)
Bioconcentration factor (BCF): 0.27
Exposure time: 61 d
Concentration: 1000 mg/l
Method: Flow through

Partition coefficient: n-octanol/water : log Pow: -1.36

DIETHYLENE GLYCOL**:**
Bioaccumulation : Species: Leuciscus idus (Golden orfe)
Bioconcentration factor (BCF): 100

Partition coefficient: n-octanol/water : log Pow: -1.47

No data available

Mobility in soil

Components:

No data available

Other adverse effects

No data available

Product:

Additional ecological information : No data available

Components:

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

General advice	:	Do not dispose of waste into sewer. Do not contaminate ponds, waterways or ditches with chemical or used container. Send to a licensed waste management company. Dispose of in accordance with all applicable local, state and federal regulations.
Contaminated packaging	:	Empty remaining contents. Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION

International transport regulations

REGULATION

ID NUMBER	PROPER SHIPPING NAME	*HAZARD CLASS	SUBSIDIARY HAZARDS	PACKING GROUP	MARINE POLLUTANT / LTD. QTY.

U.S. DOT - ROAD

Not dangerous goods

CFR_RAIL_C

Not dangerous goods

U.S. DOT - INLAND WATERWAYS

Not dangerous goods

TDG_ROAD_C

Not dangerous goods

TDG_RAIL_C

Not dangerous goods

TDG_INWT_C

Not dangerous goods

INTERNATIONAL MARITIME DANGEROUS GOODS

Not dangerous goods

INTERNATIONAL AIR TRANSPORT ASSOCIATION - CARGO

Not dangerous goods

INTERNATIONAL AIR TRANSPORT ASSOCIATION - PASSENGER

Not dangerous goods

MX_DG

Not dangerous goods

***ORM = ORM-D, CBL = COMBUSTIBLE LIQUID**

Marine pollutant		no

Dangerous goods descriptions (if indicated above) may not reflect quantity, end-use or region-specific exceptions that can be applied. Consult shipping documents for descriptions that are specific to the shipment.

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act
CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
ETHYLENE GLYCOL	107-21-1	5000	5224

SARA 304 Extremely Hazardous Substances Reportable Quantity
This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : Acute Health Hazard
Chronic Health Hazard

SARA 313

ETHYLENE GLYCOL	107-21-1	95.72 %

California Prop 65 WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.
ETHYLENE GLYCOL 107-21-1

The components of this product are reported in the following inventories:

DSL : All components of this product are on the Canadian DSL

AICS : On the inventory, or in compliance with the inventory

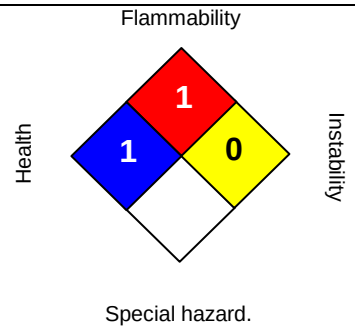
ENCS	:	Not in compliance with the inventory
KECI	:	On the inventory, or in compliance with the inventory
PICCS	:	On the inventory, or in compliance with the inventory
IECSC	:	On the inventory, or in compliance with the inventory
TSCA	:	On TSCA Inventory

Inventories
AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TSCA (USA)

SECTION 16. OTHER INFORMATION

Further information
Revision Date: 01/15/2018

NFPA:



HMIS III:

HEALTH	1*
FLAMMABILITY	1
PHYSICAL HAZARD	0

0 = not significant, 1 =Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

NFPA Flammable and Combustible Liquids Classification
Combustible Liquid Class IIIB

Full text of H-Statements

H302	Harmful if swallowed.
H360	May damage fertility or the unborn child.
H373	May cause damage to organs through prolonged or repeated exposure if swallowed.

Sources of key data used to compile the Safety Data Sheet
Valvoline internal data including own and sponsored test reports
The UNECE administers regional agreements implementing harmonised classification for labelling (GHS) and transport.

The information accumulated herein is believed to be accurate but is not warranted to be whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances. This SDS has been prepared by Valvoline's Environmental Health and Safety Department (1-800-VALVOLINE).

List of abbreviations and acronyms that could be, but not necessarily are, used in this safety data sheet :
ACGIH : American Conference of Industrial Hygienists
BEI : Biological Exposure Index
CAS : Chemical Abstracts Service (Division of the American Chemical Society).
CMR : Carcinogenic, Mutagenic or Toxic for Reproduction
FG : Food grade
GHS : Globally Harmonized System of Classification and Labeling of Chemicals.
H-statement : Hazard Statement
IATA : International Air Transport Association.
IATA-DGR : Dangerous Goods Regulation by the “International Air Transport Association” (IATA).

ICAO : International Civil Aviation Organization
ICAO-TI (ICAO) : Technical Instructions by the “International Civil Aviation Organization”
IMDG : International Maritime Code for Dangerous Goods
ISO : International Organization for Standardization
logPow : octanol-water partition coefficient
LCxx : Lethal Concentration, for xx percent of test population
LDxx : Lethal Dose, for xx percent of test population.
ICxx : Inhibitory Concentration for xx of a substance
Ecxx : Effective Concentration of xx
N.O.S.: Not Otherwise Specified
OECD : Organization for Economic Co-operation and Development
OEL : Occupational Exposure Limit
P-Statement : Precautionary Statement
PBT : Persistent , Bioaccumulative and Toxic
PPE : Personal Protective Equipment
STEL : Short-term exposure limit
STOT : Specific Target Organ Toxicity
TLV : Threshold Limit Value
TWA : Time-weighted average
vPvB : Very Persistent and Very Bioaccumulative
WEL : Workplace Exposure Level

CERCLA : Comprehensive Environmental Response, Compensation, and Liability Act
DOT : Department of Transportation
FIFRA : Federal Insecticide, Fungicide, and Rodenticide Act
HMIRC : Hazardous Materials Information Review Commission
HMIS : Hazardous Materials Identification System

NFPA : National Fire Protection Association
NIOSH : National Institute for Occupational Safety and Health
OSHA : Occupational Safety and Health Administration
PMRA : Health Canada Pest Management Regulatory Agency
RTK : Right to Know
WHMIS : Workplace Hazardous Materials Information System

ZINC Metal HG & SHG

Safety Data Sheet (SDS)

Section 1 – Identification

1(a) Product Identifier Used on Label: Zinc Metal - HG & SHG

1(b) Other Means of Identification: High Grade (HG) and Special High Grade (SHG) Zinc

1(c) Recommended Use of the Chemical and Restrictions on Use: None

1(d) Name, Address, and Telephone Number:

WIRE-BOND Phone number : 800-849-6722
400 Rountree Road
Charlotte, NC 28217

1(e) Emergency Phone Number: Chemtrec 1-800-424-9300 (Within Continental U.S.); Chemtrec 703-527-3887 (Outside U.S.).

Section 2 – Hazard(s) Identification

2(a) Classification of the Chemical: Zinc Metal is **NOT** considered a hazardous material according to the criteria specified in REACH [REGULATION (EC) No 1907/2006] and CLP [REGULATION (EC) No 1272/2008] and OSHA 29 CFR 1910.1200 Hazard Communication Standard. The categories of Health Hazards as defined in "GLOBALLY HARMONIZED SYSTEM OF CLASSIFICATION AND LABELLING OF CHEMICALS (GHS), Third revised edition ST/SG/AC.10/30/Rev. 3" United Nations, New York and Geneva, 2009 have been evaluated. Refer to Section 3, 8 and 11 for additional information.

2(b) Signal Word, Hazard Statement(s), Symbols and Precautionary Statement(s): Not Applicable

2(c) Hazards not Otherwise Classified: None Known

2(d) Unknown Acute Toxicity Statement (Mixture): None Known

Section 3 – Composition/Information on Ingredients

3(a-c) Chemical Name, Common Name (Synonyms), CAS Number and Other Identifiers, and Concentration:

Chemical Name	CAS Number	EC Number	% weight
Zinc	7440-66-6	231-175-3	99.95% (HG) - 99.99% (SHG) min.

EC- European Community
CAS- Chemical Abstract Service
Note: High Grade (.03% max lead), Special High Grade (.003% max lead)

Section 4 – First-aid Measures

4(a) Description of Necessary Measures:

Inhalation: If inhaled: Remove person to fresh air and keep comfortable for breathing.

Eye Contact: If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Skin Contact: If on skin: Rinse skin with water/shower.

Ingestion: If swallowed: Rinse mouth. Do NOT induce vomiting.

4(b) Most Important Symptoms/Effects, Acute and Delayed (Chronic):

Acute effects:

Inhalation: Excessive exposure to high concentrations of dust may cause irritation to the eyes, skin and mucous membranes of the upper respiratory tract.

Eye: Excessive exposure to high concentrations of dust may cause irritation to the eyes.

Skin: Skin contact with dusts may cause irritation or sensitization, possibly leading to dermatitis. Skin contact with metallic dusts may cause physical abrasion.

Ingestion: Ingestion of dust may cause nausea and/or vomiting.

Chronic Effects:

Individuals with chronic respiratory disorders (i.e., asthma, chronic bronchitis, emphysema, etc.) may be adversely affected by any airborne particulate matter exposure. Persons with pre-existing skin disorders may be more susceptible to dermatitis.

4(c) Immediate Medical Attention and Special Treatment: Treat symptomatically.

Section 5 – Fire-fighting Measures

5(a) Suitable (and Unsuitable) Extinguishing Media: Smother and cool with a suitable dry extinguishing agent (class D fires) such as dry powder (Ansul Met-L-X), zinc oxide or dry sand. Do not use water if possible. Use water only when necessary, such as to cool containers exposed to fire. Extreme caution should be taken to prevent contact with molten zinc or burning zinc products.

Section 5 – Fire-fighting Measures (continued)

5(b) Specific Hazards Arising from the Chemical: The pressure in sealed containers can increase under the influence of heat.

5(c) Special Protective Equipment and Precautions for Fire-fighters: Self-contained NIOSH approved respiratory protection and full protective clothing should be worn when fumes and/or smoke from fire are present. Heat and flames cause emittance of acrid smoke and fumes. Do not release runoff from fire control methods to sewers or waterways. Firefighters should wear full face-piece self-contained breathing apparatus and chemical protective clothing with thermal protection. Direct water stream will scatter and spread flames and, therefore, should not be used.

Section 6 - Accidental Release Measures

6(a) Personal Precautions, Protective Equipment and Emergency Procedures: For spills involving finely divided particles, clean-up personnel should be protected against contact with eyes and skin. If material is in a dry state, avoid inhalation of dust. Personnel should be protected against contact with eyes and skin. Fine, dry material should be removed by vacuuming or wet sweeping methods to prevent spreading of dust. Avoid using compressed air. Do not release into sewers or waterways.

6(b) Methods and Materials for Containment and Clean Up: Collect material in appropriate, labeled containers for recovery or disposal in accordance with federal, state, and local regulations. Follow applicable OSHA regulations (29 CFR 1910.120) and all other pertinent state and federal requirements.

Section 7 - Handling and Storage

7(a) Precautions for Safe Handling: Use personal protective equipment as required. Avoid and control operations which create high dust concentrations.

7(b) Conditions for Safe Storage, Including any Incompatibilities: Store in a cool, well-ventilated area. Keep away from heat. Inspect periodically for damage or leaks. Store away from incompatible materials.

Section 8 - Exposure Controls / Personal Protection

8(a) Occupational Exposure Limits (OELs): The following exposure limits are offered as reference, for an experienced industrial hygienist to review.

Ingredients	OSHA PEL 1	ACGIH TLV 2	NIOSH REL 3	IDLH 4
Zinc Compounds	5.0 mg/m³ (as zinc oxide fume) 15 mg/m³ (as total dust) 5.0 mg/m³ (as respirable fraction)	2.0 mg/m³ (as zinc oxide)	10 mg/m³ (as total dust) 5.0 mg/m³ (as respirable dust)	NE

NE - None Established

1. OSHA PELs (Permissible Exposure Limits) are 8-hour TWA (time-weighted average) concentrations unless otherwise noted. A ("C") designation denotes a ceiling limit, which should not be exceeded during any part of the working exposure unless otherwise noted. An Action level (AL) is used by OSHA and NIOSH to express a health or physical hazard. They indicate the level of a harmful or toxic substance/activity, which requires medical surveillance, increased industrial hygiene monitoring, or biological monitoring. Action Levels are generally set at one half of the PEL but the actual level may vary from standard to standard. The intent is to identify a level at which the vast majority of randomly sampled exposures will be below the PEL.
2. Threshold Limit Values (TLV) established by the American Conference of Governmental Industrial Hygienists (ACGIH) are 8-hour TWA concentrations unless otherwise noted.
   ACGIH TLVs are for guideline purposes only and as such are not legal, regulatory limits for compliance purposes. A Short Term Exposure Limit (STEL) is defined as the maximum concentration to which workers can be exposed for a short period of time (15 minutes) for only four times throughout the day with at least one hour between exposures.
3. The National Institute for Occupational Safety and Health Recommended Exposure Limits (NIOSH-REL) - Compendium of Policy and Statements. NIOSH, Cincinnati, OH (1992). NIOSH is the federal agency designated to conduct research relative to occupational safety and health. As is the case with ACGIH TLVs, NIOSH RELs are for guideline purposes only and as such are not legal, regulatory limits for compliance purposes.
4. The "immediately dangerous to life or health air concentration values (IDLHs)" are used by NIOSH as part of the respirator selection criteria and were first developed in the mid-1970's by NIOSH. The Documentation for Immediately Dangerous to Life or Health Concentrations (IDLHs) is a compilation of the rationale and sources of information used by NIOSH during the original determination of 387 IDLHs and their subsequent review and revision in 1994.

8(b) Appropriate Engineering Controls: Local exhaust ventilation should be used to control the emission of air contaminants. General dilution ventilation may assist with the reduction of air contaminant concentrations. Emergency eye wash stations and deluge safety showers should be available in the work area.

8(c) Individual Protection Measures:

Respiratory Protection: Seek professional advice prior to respirator selection and use. Follow OSHA respirator regulations (29 CFR 1910.134) and, if necessary, use only a NIOSH-approved respirator. Select respirator based on its suitability to provide adequate worker protection for given working conditions, level of airborne contamination, and presence of sufficient oxygen. Concentration in air of the various contaminants determines the extent of respiratory protection needed. Half-face, negative-pressure, air-purifying respirator equipped with P100 filter is acceptable for concentrations up to 10 times the exposure limit. Full-face, negative-pressure, air-purifying respirator equipped with P100 filter is acceptable for concentrations up to 50 times the exposure limit. Protection by air-purifying negative-pressure and powered air respirators is limited. Use a positive-pressure-demand, full-face, supplied air respirator or self contained breathing apparatus (SCBA) for concentrations above 50 times the exposure limit. If exposure is above the IDLH (immediately dangerous to life or health) for any of the constituents, or there is a possibility of an uncontrolled release or exposure levels are unknown, then use a positive-demand, full-face, supplied air respirator with escape bottle or SCBA.

Warning! Air-purifying respirators both negative-pressure, and powered-air do not protect workers in oxygen-deficient atmospheres.

Section 8 - Exposure Controls / Personal Protection (continued)

8(c) Individual Protection Measures (continued):

Eyes: Wear eye protection/face protection. A face shield should be used when appropriate to prevent contact with splashed materials. Chemical goggles, face shields or glasses should be worn to prevent eye contact. Contact lenses should not be worn where industrial exposure to this material is likely.

Skin: Persons handling this product should wear appropriate clothing.

Other protective equipment: An eyewash fountain and deluge shower should be readily available in the work area.

Section 9 - Physical and Chemical Properties

9(a) Appearance (physical state, color, etc.): Silver gray, metallic solid.

9(b) Odor: Odorless

9(c) Odor Threshold: NA

9(d) pH: NA

9(e) Melting Point/Freezing Point: 420°C

9(f) Initial Boiling Point and Boiling Range: 907oC

9(g) Flash Point: NA

9(h) Evaporation Rate: NA

9(i) Flammability (solid, gas):

9(j) Upper/Lower Flammability or Explosive Limits: NA

9(k) Vapor Pressure: NA

9(l) Vapor Density (Air = 1): NA

9(m) Relative Density: 7.14 SG

9(n) Solubility(ies): slightly soluble (<2 mg/L)

9(o) Partition Coefficient n-octanol/water: NA

9(p) Auto-ignition Temperature: ND

9(q) Decomposition Temperature: ND

9(r) Viscosity: ND

NA - Not Applicable

ND - Not Determined for product as a whole

Section 10 - Stability and Reactivity

10(a) Reactivity: Not Determined (ND)

10(b) Chemical Stability: Zinc Metal is stable under normal storage and handling conditions.

10(c) Possibility of Hazardous Reaction: None Known

10(d) Conditions to Avoid: Direct sources of heat.

10(e) Incompatible Materials: Acids; Alkalis; Halogenated compounds; Oxidizing agents; Nitrogen compounds.

10(f) Hazardous Decomposition Products: Oxides of carbon, metal oxides and toxic vapors may be releases at elevated temperatures.

Section 11 - Toxicological Information

11 Information on Toxicological Effects: The following toxicity data has been determined for **Zinc Metal** by using the information available for its components applied to the guidance on the preparation of an SDS under the GHS requirements of OSHA and the EU CPL:

NR Not Rated - Available data does not meet criteria for classification.

The Toxicological data listed below are presented regardless to classification criteria. Individual hazard classification categories where the toxicological information has met or exceeded a classification criteria threshold are listed above.

a. No LC50 or LD50 has been established for **Zinc Metal**.

b. No Skin (Dermal) Irritation data available for **Zinc Metal**.

c. No Eye Irritation data available for **Zinc Metal**.

d. No Skin (Dermal)/Respiratory Sensitization data available for **Zinc Metal**.

e. No Aspiration Hazard data available for **Zinc Metal**.

f. No Germ Cell Mutagenicity data available for **Zinc Metal**.

g. Carcinogenicity: IARC, NTP, and OSHA do not list **Zinc Metal** as a carcinogen.

h. No Toxic Reproduction data available for **Zinc Metal**.

i. No Specific Target Organ Toxicity (STOT) following a Single Exposure data available for **Zinc Metal**.

j. No Specific Target Organ Toxicity (STOT) following Repeated Exposure data was available for **Zinc Metal**.

The above toxicity information was determined from available scientific sources to illustrate the prevailing posture of the scientific community. The scientific resources includes: The American Conference of Governmental Industrial Hygienist (ACGIH) Documentation of the Threshold Limit Values (TLVs) and Biological Exposure indices (BEIs) with Other Worldwide Occupational Exposure Values 2009, The International Agency for Research on Cancer (IARC), The National Toxicology Program (NTP) updated documentation, the World Health Organization (WHO) and other available resources, the International Uniform Chemical Information Database (IUCLID), European Union Risk Assessment Report (EU-RAR), Concise International Chemical Assessment Documents (CICAD), European Union Scientific Committee for Occupational Exposure Limits (EU-SCOEL), Agency for Toxic Substances and Disease Registry (ATSDR), Hazardous Substance Data Bank (HSDB), and International Programme on Chemical Safety (IPCS), European Union Classification, Labeling and Packaging. (EU CPL), Regulation on Registration, Evaluation, Authorization and Restriction of Chemicals (REACH), International Uniform Chemical Information Database (IUCLID), TOXicology Data NETwork (TOXNET), European Risk Assessment Reports (EU RAR).

Section 11 - Toxicological Information (continued)

The following health hazard information is provided regardless to classification criteria and is based on the individual component(s):

Acute Effects by Component:

ZINC: Not Reported/ Not Classified

Delayed (chronic) Effects by Component:

ZINC: Zinc Residue CGLs are a low health risk by inhalation and should be treated as a nuisance dust. Inhalation of zinc oxide fumes may cause metal fume fever, which is characterized by flu-like symptoms with metallic taste, fever, chills, cough, weakness, chest pain, muscle pain and increased white blood cell count.

Section 12 - Ecological Information

12(a) Ecotoxicity (aquatic & terrestrial): Not Applicable (NA) as shipped or sold. Zinc metal is not an environmental hazard, however processing may lead to the release of zinc compounds in bioavailable forms generated from downstream processing activities.

12(b) Persistence & Degradability: Not Applicable (NA) as shipped or sold

12(c) Bioaccumulative Potential: Not Applicable (NA) as shipped or sold

12(d) Mobility (in soil): Not Applicable (NA) as shipped or sold

Additional Information:

Hazard Category: Not Applicable (NA) as shipped or sold

Signal Word: Not Applicable (NA) as shipped or sold

Hazard Symbol: Not Applicable (NA) as shipped or sold

Hazard Statement: Not Applicable (NA) as shipped or sold

Section 13 - Disposal Considerations

Disposal: Dispose of in accordance with Local, State, Federal and International regulations. Observe safe handling precautions.

Container Cleaning and Disposal: Follow Local, State, Federal and international regulations. Observe safe handling precautions.

Please note this information is for Zinc Metal in its original form. Any alterations can void this information.

Section 14 - Transport Information

14 (a-g) Transportation Information:

US Department of Transportation (DOT) under 49 CFR 172.101 does not regulate **Zinc Metal** as a hazardous material. All federal, state, and local laws and regulations that apply to the transport of this type of material must be adhered to.

Shipping Name: NOT DOT Regulated **Shipping Symbols:** NA **Hazard Class:** NA **UN No.:** NA **Packing Group** NA **DOT/ IMO Label:** NA **Special Provisions (172.102):** NA	**Packaging Authorizations** **a) Exceptions:** NA **b) Non-bulk:** NA **c) Bulk:** NA	**Quantity Limitations** **a) Passenger Aircraft or Rail:** NA **b) Cargo Aircraft Only:** NA **Vessel Stowage Location:** NA **DOT reportable quantities**: NA

International Maritime Dangerous Goods (IMDG) and the Regulations Concerning the International Carriage of Dangerous Goods by Rail (RID) classification, packaging and shipping requirements follow the US DOT Hazardous Materials Regulation**.**

Regulations Concerning the International Carriage of Dangerous Goods by Road (ADR) does not regulate **Zinc Metal** as a hazardous material.

Shipping Name: NOT DOT Regulated **Classification Code:** NA **UN No.:** NA **Packing Group:** NA **ADR Label:** NA **Special Provisions:** NA **Limited Quantities:** NA	**Packaging** **a) Packing Instructions:** NA **b) Special Packing Provisions:** NA **c) Mixed Packing Provisions:** NA	**Portable Tanks & Bulk Containers** **a) Instructions:** NA **b) Special Provisions:** NA

International Air Transport Association (IATA) does not regulate **Zinc Metal** as a hazardous material.

Shipping Name: NOT DOT Regulated **Class/Division:** NA **Hazard Label (s):** NA **UN No.:** NA **Packing Group:** NA **Excepted Quantities (EQ):** NA	**Passenger & Cargo Aircraft Limited Quantity (EQ)**		**Cargo Aircraft Only** **Pkg Inst:** NA **Max Net Qty/Pkg:** NA	**Special Provisions:** NA **ERG Code:** NA
	Pkg Inst: NA **Max Net Qty/Pkg:** NA	**Pkg Inst:** NA **Max Net Qty/Pkg:** NA		

Pkg Inst – Packing Instructions Max Net Qty/Pkg – Maximum Net Quantity per Package ERG – Emergency Response Drill Code

Section 14 - Transport Information (continued)

Zinc Metal does not have a **Transport Dangerous Goods (TDG)** classification.

Section 15 - Regulatory Information

Regulatory Information: *The following listing of regulations relating to a Horsehead product may not be complete and should not be solely relied upon for all regulatory compliance responsibilities.*

This product and/or its constituents are subject to the following regulations:

OSHA Regulations: Air Contaminant (29 CFR 1910.1000, Table Z-1, Z-2, Z-3): The product, **Zinc Metal** as a whole is listed. Refer to Section 8, Exposure Controls and Personal Protection

EPA Regulations: The product, **Zinc Metal** is not listed as a whole in the following regulatory listings. However, individual components of the product are listed:

Components	Regulations
Zinc (Zn Compounds)	CWA, SARA 313

SARA Potential Hazard Categories: Immediate Acute Health Hazard, Delayed Chronic Health Hazard.

Regulations Key:

CAA	Clean Air Act (42 USC Sec. 7412; 40 CFR Part 61 [As of: 8/18/06])
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act (42 USC Secs. 9601(14), 9603(a); 40 CFR Sec. 302.4, Table 302.4, Table 302.4 and App. A)
CWA	Clean Water Act (33 USC Secs. 1311; 1314(b), (c), (e), (g); 136(b), (c); 137(b), (c) [as of 8/2/06])
RCRA	Resource Conservation Recovery Act (42 USC Sec. 6921; 40 CFR Part 261 App VIII)
SARA	Superfund Amendments and Reauthorization Act of 1986 Title III Section 302 Extremely Hazardous Substances (42 USC Secs. 11023, 13106; 40 CFR sec. 372.65) and Section 313 Toxic Chemicals (42 USC Secs. 11023, 13106; 40 CFR Sec. 372.65 [as of 6/30/05])
TSCA	Toxic Substance Control Act (15 U.S.C. s/s 2601 et seq. [1976])
SDWA	Safe Drinking Water Act (42 U.S.C. s/s 300f et seq. [1974])

Section 313 Supplier Notification: The product, **Zinc Metal** contains the following toxic chemicals subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR part 372:

CAS #	Chemical Name	Percent by Weight
7440-66-6	Zinc	100

State Regulations: The product, **Zinc Metal** as a whole is not listed in any state regulations. However, individual components of the product are listed in various state regulations:

Pennsylvania Right to Know (RTK):	Contains regulated material in the following categories: Hazardous Substances: Zinc Environmental Hazards: Zinc
California Prop. 65:	Does not contains elements known to the State of California to cause cancer or reproductive toxicity.
New Jersey:	Contains regulated material in the following categories: Hazardous Substance: Zinc Environmental Hazards: Zinc
Minnesota:	Zinc
Massachusetts:	Zinc

Other Regulations:

WHMIS Classification (Canadian): The product, **Zinc Metal** is not listed

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations.

Section 16 - Other Information

Prepared By: Horsehead Corporation

Revision History:

05/19/2015 - Original

Additional Information:

Hazardous Material Identification System (HMIS) Classification

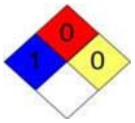
Health Hazard	1
Fire Hazard	0
Physical Hazard	0

HEALTH= **1**, * Denotes possible chronic hazard if airborne dusts or fumes are generated Irritation or minor reversible injury possible.

FIRE= **0**, Materials that will not burn.

PHYSICAL HAZARDS = **0**, Materials that are normally stable, even under fire conditions, and will not react with water, polymerize, decompose, condense, or self-react. Non-explosives.

National Fire Protection Association (NFPA)



HEALTH = **1**, Exposure could cause irritation but only minor residual injury even if no treatment is given.

FIRE = **0,** Materials that will not burn.

INSTABILITY = **0**, Normally stable, even under fire exposure conditions, and are not reactive with water.

Section 16 - Other Information (continued)

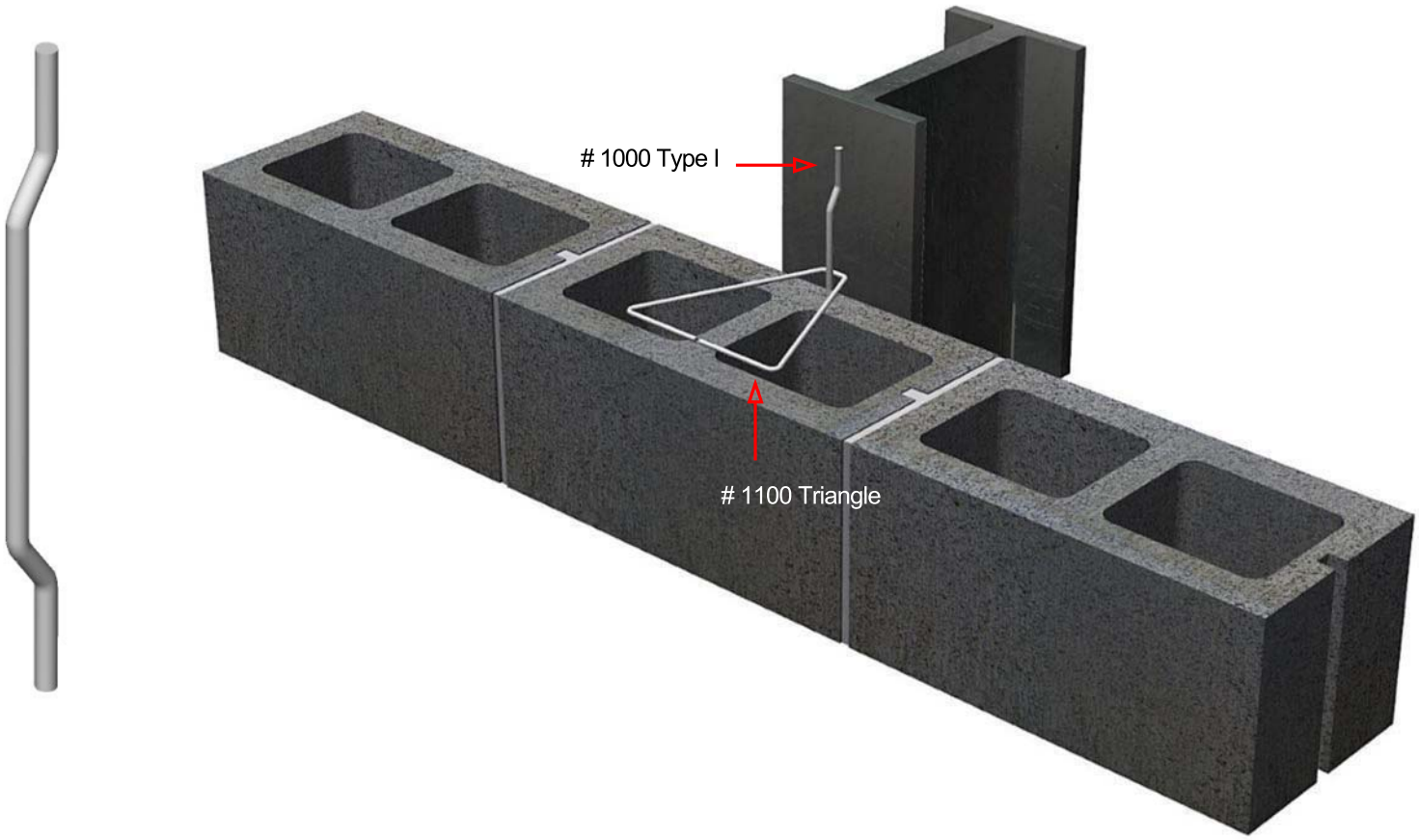
ABBREVIATIONS/ACRONYMS:

ACGIH	American Conference of Governmental Industrial Hygienists	**NIF**	No Information Found
BEIs	Biological Exposure Indices	**NIOSH**	National Institute for Occupational Safety and Health
CAS	Chemical Abstracts Service	**NTP**	National Toxicology Program
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act	**ORC**	Organization Resources Counselors
CLP	Classification, Labelling and Packaging	**OSHA**	Occupational Safety and Health Administration
CFR	Code of Federal Regulations	**PEL**	Permissible Exposure Limit
CNS	Central Nervous System	**PNOR**	Particulate Not Otherwise Regulated
GI, GIT	Gastro-Intestinal, Gastro-Intestinal Tract	**PNOC**	Particulate Not Otherwise Classified
HMIS	Hazardous Materials Identification System	**PPE**	Personal Protective Equipment
IARC	International Agency for Research on Cancer	**ppm**	parts per million
LC50	Median Lethal Concentration	**RCRA**	Resource Conservation and Recovery Act
LD50	Median Lethal Dose	**REACH**	Regulation on Registration, Evaluation, Authorization and Restriction of Chemicals
LD Lo	Lowest Dose to have killed animals or humans	**RTECS**	Registry of Toxic Effects of Chemical Substances
LEL	Lower Explosive Limit	**SARA**	Superfund Amendment and Reauthorization Act
LOEL	Lowest Observed Effect Level	**SCBA**	Self-contained Breathing Apparatus
LOAEC	Lowest Observable Adverse Effect Concentration	**SDS**	Safety Data Sheet
µg/m3	microgram per cubic meter of air	**STEL**	Short-term Exposure Limit
mg/m3	milligram per cubic meter of air	**TLV**	Threshold Limit Value
mppcf	million particles per cubic foot	**TWA**	Time-weighted Average
MSHA	Mine Safety and Health Administration	**UEL**	Upper Explosive Limit
NFPA	National Fire Protection Association		

Disclaimer: This information is taken from sources or based upon data believed to be reliable. Our objective in sending this information is to help you protect the health and safety of your personnel and to comply with the OSHA Hazard Communication Standard and Title III of the Emergency Planning and Community Right-to-Know Act. WIRE-BOND makes no warranty as to the absolute correctness, completeness, or sufficiency of any of the foregoing, or any additional, or other measures that may not be required under particular conditions. THIS WIRE-BOND SDS MAKES NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY, OR ANY IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, AND ANY IMPLIED WARRANTIES OTHERWISE ARISING FROM COURSE OF DEALING OR TRADE.

PRODUCT SUBMITTAL

1000 Type I Weld-On Anchor



MATERIAL CONFORMANCE	SIZES / FINISHES
ASTM A82 / A82M - (Cold drawn steel wire) Tensile Strength - 80,000 psi Yield Point - 70,000 psi **ASTM A951 / A951M-06** - (Standard Specification for Steel Wire for Masonry Joint Reinforcement) **ACI / ASCE 530** - (Building code requirements for masonry structures Mill Galvanized / Zinc Coating: **ASTM A641 / A641M (0.10 0z per sq ft)** Hot Dip Galvanized after fabrication / Zinc Coating **ASTM A153 / A153M-B2 (1.50 oz per sq ft)** Stainless Steel **ASTM 580 / ASTM 580M Type 304** (Type 316 available on special order) **Recycled Content:** Mill Galvanized & Hot Dipped, 82.8% Post-Consumer 17% Post Industrial / Pre-Consumer, Stainless Steel, 60% Post Consumer V O C Content - 0%	**# 1000 Type I Weld-On:** ☐ ¼″ dia. x 5″ ☑ ¼″ dia. x 9″ **# 1100 Triangle:** ☑ 3/16" ☐ 1/4" ☐ 3″ x 3″ ☐ 4″ x 4″ ☐ 5″ x 5″ ☐ 7″ x 7″ ☐ 9″ x 9″ **FINISH:** ☑ Mill Galvanized ☐ Hot Dip Galvanized ☐ Stainless Steel

www.wirebond.com

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SAFETY DATA SHEET

1. *PRODUCT AND COMPANY IDENTIFICATION*

Product Name: GALVANIZED STEEL WIRE

Synonyms: N/A

CAS Number: MIXTURE

Product Use: Various wire products.

Manufacturer/Supplier: WIRE-BOND

Address: 400 Rountree Road Charlotte, NC 28217

General Information: 704-525-5554

Transportation Emergency Number: CHEMTREC: 800-424-9300

2. *HAZARDS IDENTIFICATION:*

This product is gray-black with no odor.

Emergency Overview:

Steel Products sold by Mid South Wire are not hazardous per OSHA GHS 29 CFR 1910, 1915, 1926. However, individual customer processes (such as welding, sawing, brazing, grinding, abrasive blasting, and machining) may result in the formation of fumes, dust (combustible or otherwise), and/or particulate that may present the following hazards:

OSHA Hazards: **Carcinogen**
Skin Sensitizer
Target Organ Effect-Lungs

Classification: Carcinogenicity (Category 2)
Skin Sensitization (Category 1)
Specific Target Organ Toxicity-Repeated Exposure (Category 1)

Pictogram(s):



Signal Word: Danger

Hazard Statement(s)

Dust/Fumes may cause an allergic skin reaction.
Dust/Fumes suspected of causing cancer via inhalation.
Inhalation of dust/fumes causes damage to respiratory tract through prolonged or repeated exposure.

Precautionary Statement(s)

Do not handle until all safety precautions have been read and understood.
Avoid breathing dust/fumes.
Use personal protective equipment as required.
If exposed or concerned: Get medical advice/attention.

3. *COMPOSITION/INFORMATION*

The components listed below represent the chemical composition of the wire material:

Steel Wire Composition				
Element	CAS NO.	Wt. %	OSHA PEL	ACGIH-TLV
Iron	7439-89-6	BALANCE	10MG/M3	5MG/M3
Manganese	7439-96-5	0-1.0	5MG/M3	5MG/M3
Silicon	7440-21-3	0-1.5	10MG/M3	10MG/M3
Chromium	7440-47-3	0-0.15	10MG/M3	5MG/M3
Molybdenum	7439-98-7	0-1.0	5MG/M3	5MG/M3
Carbon	7440-44-0	0-1.0	3.5MG/M3	Non-Listed
Nickel	7440-02-0	0-0.15	10MG/M3	5MG/M3
Sulfur	7704-34-9	0-1.0	N/AV	N/AV
Tin	7440-31-5	0-1.0	N/AV	N/AV
Phosphorus	7723-14-0	0-1.0	N/AV	0.1MG/M3
Copper	7440-50-8	0-1.0	3.5MG/M3	0.2MG/M3
Aluminum	7429-90-5	<0.10	N/AV	10MG/M3
Vanadium	7440-62-2	0-1.0	6MG/M3	0.5MG/M3
Titanium	7440-32-6	<0.10	N/AV	N/AV
Boron	7440-42-8	<0.10	6.5MG/M3	N/AV
Lead	7439-92-1	<0.001	10MG/M3	10MG/M3
No other elements or compounds exceed 1%			N/AV=Not Available	

Surface Coating				
Element	CAS NO.	Wt. %	OSHA PEL	ACGIH-TLV
Zinc	7440-66-6	0-14*	5MG/M3	5MG/M3
Lead	7439-92-1	0-0.01	0.005MG/M3	0.15MG/M3

Boron Salts	1303-96-4	0-0.20	N/A	N/A
Stearates	N/A	0-0.20	N/A	10MG/M3
Calcium Hydroxide	1305-62-0	0-0.20	N/A	10MG/M3
Zinc Oxide	1314-13-2	0-0.10	N/A	10MG/M3
Petroleum Dist.	8002-05-9	0-0.01	N/A	5MG/M3
Paraffinic Dist.	64742-65-0	0-0.01	N/A	5MG/M3

*See Zinc Table on Page 13

4. *FIRST AID MEASURES*

Description of First Aid Measures

Eye Contact: In case of overexposure to dusts or fumes, immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the eye lids. Get medical attention if irritation persists. Thermal burns should be treated as medical emergencies.

Skin Contact: In case of overexposure to dusts or particulates, wash with soap and plenty of water. Get medical attention if irritation develops or persists. If thermal burn occurs, flush area with cold water and get immediate medical attention.

Inhalation: In case of overexposure to dusts or fumes, remove to fresh air. Get immediate medical attention if symptoms described in the SDS develop.

Ingestion: Not considered an ingestion hazard. However, if excessive amounts of dust or particulates are swallowed, treat symptomatically and supportively. Get medical attention.

Notes to Physician: Inhalation of metal fume or metal oxides may produce an acute febrile state, with cough, chills, weakness, and general malaise, nausea, vomiting, muscle cramps, and remarkable

leukocytosis. Treatment is symptomatic, and condition is self-limited in 24-48 hours. Chronic exposure to dusts may result in pneumoconiosis of mixed type.

5. ***FIRE FIGHTING MEASURES***

Flash Point (Method): Not applicable.

Flammable Limits (% volume in air): Not applicable.

Auto Ignition Temperature: Not applicable.

Extinguishing Media: For molten metal, use dry powder or sand. For steel dust use dry sand, water, foam, argon or nitrogen.

Special Fire Fighting Procedures: Do not use water on molten metal. Do not use Carbon Dioxide (CO2). Firefighters should not enter confined spaces without wearing NIOSH/MSHA approved positive pressure breathing apparatus (SCBA) with full face mask and full protective equipment.

Unusual Fire or Explosion Hazards: Steel products doo not present fire or explosion hazards under normal conditions. Any non-oxidized fine metal particles/dust generated by grinding, sawing, abrasive blasting, or individual customer processes may produce materials that the customer should test for combustibility and other hazards in accordance with the applicable regulations. High concentrations of combustible metallic fines in the air may present an explosion hazard.

6. ***ACCIDENTAL RELEASE MEASURES***

Precautions if Material is Spilled or Released: Emergency response is unlikely unless in the form of combustible dust. Avoid inhalation, eye, or skin contact of dusts by using appropriate precautions outlined in this SDS (see section 8). Fine turnings and small chips should be swept or vacuumed and placed into appropriate disposable containers. Keep fine dust or powder away from sources of ignition. Scrap should be reclaimed for recycling. Prevent materials from entering drains,

sewers, or waterways. Specific standards and regulations may be applicable to materials generated by individual customer processes. As appropriate, these standards and regulations should be consulted for applicability.

Fire and Explosion Hazards: Some customer processes may generate combustible dust that may require specific precautions when cleaning spills or releases of dust.

Environmental Precautions: Some grades of steel may contain reportable quantities of alloying elements. See Section 15 for additional information.

Waste Disposal Methods: Dispose of used or unused product in accordance with applicable Federal, State, and local regulations. Please recycle.

7. *HANDLING AND STORAGE*

Storage Temperatures: Stable under normal temperatures and pressures.

Precautions to be taken in Handling and Storing: Store away from strong oxidizers. Dusts and/or powders, alone, or combined with process specific fluids, may form explosive mixtures with air. Applicable Federal, state and local laws and regulations may require testing dust generated from processing of steel products to determine if it represents a fire or explosion hazard and to determine appropriate protection methods. Avoid breathing dust or fumes.

8. *EXPOSURE CONTROLS/PERSONAL PROTECTION*

Operations with potential for generating high concentrations of airborne particulates or fumes should be evaluated and controlled as necessary.

Eye Protection: Use safety glasses. Dust resistant safety goggles are recommended under circumstances where particles could cause mechanical injury such as grinding or cutting. Face shields should be used when welding or cutting.

Skin: Appropriate protective gloves should be worn as necessary. Good personal hygiene practices should be followed including cleansing exposed skin several times daily with soap and water and laundering or dry cleaning soiled work clothing.

Respiratory Protection: NIOSH/MSHA approved dust/fume/mist respirator should be used to avoid excessive exposure. See Section 3 for component material information exposure limits. If such concentrations are sufficiently high that this respirator is inadequate, or high enough to cause oxygen deficiency, use a positive pressure self-contained breathing apparatus (SCBA). Follow all applicable respirator use, fitting, and training standards and regulations.

Ventilation: Provide general and/or local exhaust ventilation to control airborne levels of dust or fumes below exposure limits.

Exposure Guidelines: No permissible exposure limits (PEL) or threshold limit values (TLV) exist for steel, See Section 3 for component materials. Various grades of steel will contain different combinations of these elements. Trace elements may also be present in minute amounts.

9. *PHYSICAL AND CHEMICAL PROPERTIES*

Appearance and Odor: Silver grey to grey black with metallic luster.

Boiling Point: Not applicable.

Melting Point: Approximately 2800o F.

pH: Not applicable.

Specific Gravity (at 15.6o C): Not applicable.

Density (at 15.6o C): Not applicable.

Vapor Pressure: Not applicable.

Vapor Density (air=1): Not applicable.

% Volatile, by Volume: Not applicable.

Solubility in Water: Insoluble.

Evaporation Rate (Butyl Acetate=1): Not applicable.

Other Physical and Chemical Data: None.

10. STABILITY AND REACTIVITY

Stability: **Stable.**

Conditions to Avoid: **Steel at temperatures above melting point may liberate fumes containing oxides of iron and alloying elements. Avoid generation of airborne fume.**

Hazardous Polymerization: **Will not occur.**

Incompatibility (Materials to Avoid): **Reacts with strong acids to form hydrogen gas. Do not store near strong oxidizers.**

Hazardous Decomposition Products: **Metallic fumes may be produces during welding, burning, grinding, and possibly machining or any situation with the potential for thermal decomposition. Refer to ANSI Z49.1.**

11. TOXICOLOGOCAL INFORMATION

The primary component of this product is iron. Long term exposure to iron dusts or fumes can result in a condition called siderosis which is considered to be a benign pneumoconiosis. Symptoms may include chronic bronchitis, emphysema, and shortness of breath upon exertion. Penetration of iron particles in the skin or eye may cause an exogenous or ocular siderosis which may be characterized by a red-brown pigmentation of the affected area. Ingestion overexposures to iron may affect the gastrointestinal, nervous, and hematopoietic system and the liver. Iron and steel founding, but not iron or iron oxide, has been listed as carcinogenic (Group 1) by IARC.

When this product is welded, fumes are generated. Welding fumes may be different in composition from the original welding product, with the chief component being ordinary oxides of the metal being welded. Chronic health effects (including cancer) have been associated with the fumes and dusts of individual component metals (see above), and welding fumes as a general category have been listed by IARC as a carcinogen (Group 2B). There is also limited evidence that welding fumes may cause adverse reproductive and fetal effects.

Evidence is stronger where welding materials contain known reproductive toxins, e.g. lead, which may be present in the coating material of this product.

Breathing fumes of dusts of this product may result in metal fume fever, which is an illness produced by inhaling metal oxides. These oxides are produced by heating various metals including cadmium, zinc, magnesium, copper, antimony, nickel, cobalt, manganese, tin, lead, beryllium, silver, chromium, aluminum, selenium, iron, and arsenic. The most common agents involved are zinc and copper.

This product may contain small amounts of manganese. Prolonged exposure to manganese dusts or fumes is associated with "manganism", a Parkinson-like syndrome characterized by a variety of neurological symptom including muscle spasms, gait disturbances, tremors, and psychoses.

This product may contain small amounts of cadmium. Primary target organs for cadmium overexposure are the lung and the kidney. Because of its cumulative nature, chronic cadmium poisoning can cause serious disease which takes many years to develop and may continue to progress despite cessation of exposure. Progression of the disease may not reflect current exposure conditions. It is also capable of causing a painful osteomalacia called "Itai-Itai" in postmenopausal women, and has caused developmental effects and/or reproductive effects in male and female animals. Cadmium is a listed carcinogen by NTP, OSHA, and IARC (Group 1).

This product may contain small amounts of chromium. Prolonged and repeated overexposure to chromium dusts or fumes may cause skin ulcers, nasal irritation and ulceration, kidney damage and cancer of the respiratory system. Chromium is a skin sensitizer. Cancer is generally attributed to the hexavalent (+6) form of chromium which is listed as a carcinogen by NTP and IARC (Group 1).

This product may contain small amounts of nickel. Prolonged and repeated contact with nickel may cause sensitization dermatitis. Inhalation of nickel compounds has caused lung damage as well as sinus, nasal and lung cancer in laboratory animals. Nickel is a listed carcinogen by NTP and IARC (Group 1).

This product may contain small amounts of vanadium. Adverse effects from dermal, inhalation or parenteral exposure to various vanadium compounds have been reported. The major target for vanadium pentoxide toxicity is the respiratory tract. Fumes or dust can cause severe eye and respiratory irritation and systemic effects. Chronic bronchitis, green tongue, conjunctivitis, pharyngitis, rhinitis, rales, chronic productive cough, and tightness of the chest have been reported following overexposure. Allergic reactions resulting from skin and inhalation exposures have also been reported. A statistical association between vanadium air levels and lung cancer has been suggested, but vanadium currently is not regarded as a human carcinogen.

This product may contain small amounts of lead. Lead can accumulate in the body. Consequently, exposure to fumes or dust may produce signs of polyneuritis, diminished vision and peripheral neuropathy, such as tingling and loss of feeling in fingers, arms and legs. Lead is a known reproductive and developmental toxin. It is also associated with the central nervous system disorders, anemia, and kidney dysfunction and neurobehavioral abnormalities. The brain is a major target organ for lead exposure. Elemental lead is listed as an IARC 2B carcinogen.

This product may contain small amounts of copper. Copper dust and fumes can irritate the eyes, nose and throat causing coughing, wheezing, nosebleeds, ulcers and metal fume fever. Other effects from repeated inhalation of copper fumes include a metallic or sweet

taste, and discoloration of skin, teeth or hair. Copper also may cause an allergic skin reaction. Overexposure to copper can affect the liver.
This product may contain zinc. Subjecting zinc or alloys containing zinc to high temperatures in the presence of oxygen (such as occurs during welding) will cause the formation of zinc oxide. Exposure to zinc oxide fumes or dusts can result in a flu-like illness called metal fume fever. Early symptoms may include a sweet or metallic taste in the mouth, dryness and irritation of the throat and coughing. These symptoms may progress to shortness of breath, headache, fever, chills, muscle aches, nausea, vomiting, weakness, fatigue and profuse sweating. The attack may last 6-48 hours and is more likely to occur after a period away from the work area.
This product may contain small amounts of silicon. Silicon exposure may produce X-ray changes in the lungs without disability.

12. ***ECOLOGOCAL INFORMATION***

Aquatic Eco toxicological Data: No specific information available on this product.

Environmental Fate Data: No specific information available on this product.

13. ***DISPOSAL CONSIDERATIONS***

Recovery and reuse, rather than disposal, should be the ultimate goal of handling efforts. Dispose in accordance with federal, state, and local health and environmental regulations. Prevent materials from entering drains, sewers, or waterways.

14. ***TRANSPORT INFORMATION***

DOT Proper Shipping Name: Not regulated.

DOT Hazard Classification: Not regulated.

UN/NA Number: Not applicable.

DOT Packing Group: Not applicable.

Labeling Requirements: Not applicable.

Placards: Not applicable.

DOT Hazardous Substance: **Not applicable.**

DOT Marine Pollutant: **Not applicable.**

15. ***REGULATORY INFORMATION***

This product is not hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29 CFR 1910.1200. However, dusts and fumes from this product may be combustible or hazardous and require protection to comply with applicable federal, state and local laws and regulation.

California Proposition 65: This product contains chemicals (Antimony [oxide], Arsenic, Beryllium, Chromium [hexavalent] Cobalt, Cadmium, Lead, Nickel) known to the State of California to cause birth defects or other reproductive harm.

Massachusetts Substance List: Aluminum, Antimony, Arsenic, Beryllium, Boron, Cadmium, Chromium, Cobalt, Copper, Lead, Magnesium, Manganese, Molybdenum, Nickel, Nitrogen, Phosphorus, Selenium, Silicon, Sulfur, Tin, Titanium, Tungsten, Vanadium, Zinc.

Pennsylvania Hazardous Substance List: Aluminum, Antimony, Arsenic, Beryllium, Boron, Cadmium, Chromium, Cobalt, Copper, Lead, Magnesium, Manganese, Molybdenum, Nickel, Nitrogen, Phosphorus, Selenium, Silicon, Sulfur, Tin, Titanium, Tungsten, Vanadium, Zinc.

New Jersey Hazardous Substance List: Aluminum, Antimony, Arsenic, Beryllium, Boron, Cadmium, Chromium, Cobalt, Copper, Lead, Magnesium, Manganese, Molybdenum, Nickel, Nitrogen, Phosphorus, Selenium, Silicon, Sulfur, Tin, Titanium, Tungsten, Vanadium, Zinc.

16. *OTHER INFORMATION*

NFPA HAZARD RATING: Health: 1
Fire: 0
Reactivity: 0

ZINC TABLE:

Class (ASTM)	Weight (%)
Brite	0
Regular	0.1-2.0
Class 1	0.5-3.0
Class 3 or A	3.0-10.0
Class B	6.0-12.0
Class C	8.0-14.0

Date Previous Revision: None.
Date This Revision: 5/20/2015.
Revision Summary: New SDS.

The preceding information is believed to be correct and current as of the date of preparation of this Safety Data Sheet. Since the use of this information and the conditions of use of this product are not within the control of WIRE-BOND, it is the user's obligation to assure safe use of this product.