SDS Index Master May 1, 2019

Item	Product Name	Manufacturer	Supplier	Loc.
1	Anaerobic Pipe Dope - PS 165	Adhesive Systems Inc.	Lyncar Products	Truck
2	Antifreeze - Propylene Glycol	Great North Chemicals Inc.	Lyncar Products	Truck
3	Batteries	Duracell	Staples	Office
4	Blazemaster Series 500 CPVC Cement	Spears	Wolseley Canada	Truck
5	Chalkline - Silicone Dioxide	Stanley	Canadian Tire	Truck
6	Coolcut Lubricant	Walter Surface Technologies	SDI Supplies	Truck
7	Deep Lube Multi Purpose Lube	Deep Lube of Canada	G & A Lock	Truck
8	Fire Extinguisher - Dry Chemical	Strike First	National Fire Equipment	Truck
9	Glass Cleaner - Windex	S.C. Johnson &Son Ltd.	S.C. Johnson & Son Ltd.	Office
10	Glass Fibre Insulation 700 Series (32A)	Owens Corning	Home Depot	Truck
11	Glass Fibre Insulation Low Density (33A)	Owens Corning	Home Depot	Truck
12	Sodium Chloride Salt (Salt De-icer)	Sifto Canada Inc.	William Knell	Office
13	Masters No-Leak	G.F. Thompson Co. Ltd.	Wolseley Canada	Truck
14	Masters Pro-Dope	G.F. Thompson Co. Ltd.	Wolseley Canada	Truck
15	Steel Cut (Oil Threading)	Reliance Fluid Technology	Lyncar Products	Truck
16	Mobil Hydraul 50 (Oil Hydraulic)	Imperial Oil Downstream	NOCO Lubricants	Truck
17	Oil - Motor 5W30 & 10W30	Shell Oil Products	Canadian Tire	Truck
18	Paint - Plasti-Kote Aerosol Rust	The Valspar Corp.	Brafasco HD	Truck
19	Paint - Tremclad aerosol Rust Paint	Rust-Oleum Coporation	Canadian Tire	Truck
20	Self Seal SL-100/GG-200 Firestop Sealants	Nuco Inc.	Nuco Inc.	Truck
21	Solopol Heavy Duty Hand Cleaner	Deb Australia	Orbit Chemical	Office
22	Steel - Carbon and Alloy	Marmon/Keystone	Wolseley Canada	Truck
23	Steel - Stainless/Specialty	Marmon/Keystone	Wolseley Canada	Truck
24	Sweeping Compound	Dustbane	SDI Supplies	Office
25	WD-40	WD-40 Products (Canada) Ltd.	Canadian Tire	Truck
26	Windshield Washer Fluid	Motomaster	Canadian Tire	Truck
27	HP Toner	HP Inc.	Staples	Office
28	Purell Moisturing Foam Hand Sanitizer Gel	GOJO Industries	Staples	Office
29	Bic White Out	Bic Coporation	Staples	Office
30	Black Toner for Taskalfa (Photocopier)	Kyocera Document Solutions	Documenting Imaging	Office

Updated : May 1, 2019

Adhesive Systems, Inc.
A Division Of Royal Adhesives & Sealants LLC.

Safety Data Sheet
acc. to OSHA HCS

Printing Date 12/23/2016 *Revision Number 1* *Revision Date 12/23/2016*

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1 Identification

· **Product identifier** Anerobic
· **Trade name: Torque PS165, Torque 177, Torque PS192, Torque PS193**
· **Relevant identified uses of the substance or mixture.** Adhesive
· **Application of the substance / the mixture** Adhesives

· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
Adhesive Systems, Inc.
A Division of Royal Adhesives & Sealants, LLC
9411 Corsair Road
Frankfort, Illinois 60423
Phone Number: 800-552-0299

· **Information department:** Environment protection department.
· **Emergency telephone number:**
ChemTrec: Day or Night within USA and Canada: 1-800-424-9300.
Outside USA and Canada: +1 703-527-3887 (collect calls accepted)

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2 Hazard(s) identification

· **Classification of the substance or mixture**

GHS07

Acute Tox. 4 H332 Harmful if inhaled.
Skin Irrit. 2 H315 Causes skin irritation.
Eye Irrit. 2A H319 Causes serious eye irritation.
STOT SE 3 H335 May cause respiratory irritation.

· **Label elements**
· **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
· **Hazard pictograms**

GHS07

· **Signal word** Warning
· **Hazard statements**
Harmful if inhaled.
Causes skin irritation.
Causes serious eye irritation.
May cause respiratory irritation.
· **Precautionary statements**
Avoid breathing dust/fume/gas/mist/vapors/spray
Wear protective gloves / eye protection / face protection.
Wash thoroughly after handling.

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Use only outdoors or in a well-ventilated area.
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 INHALED: Remove person to fresh air and keep comfortable for breathing.
Call a POISON CENTER/doctor if you feel unwell.
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.
Store in a well-ventilated place. Keep container tightly closed.
Dispose of contents/container in accordance with local/regional/national/international regulations.
· **Classification system:**
· **NFPA ratings (scale 0 - 4)**

Health = 2
Fire = 1
Reactivity = 1

· **HMIS-ratings (scale 0 - 4)**

HEALTH	2
FIRE	1
PHYSICAL HAZARD	1

Health = 2
Fire = 1
Physical Hazard = 1

· **Other hazards**
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.

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3 Composition/information on ingredients

· **Chemical characterization: Mixtures**
· **Description:** Mixture

· **Hazardous components:**		
80-15-9	α,α -dimethylbenzyl hydroperoxide	≤2.5%

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4 First-aid measures

· **Description of first aid measures**
· **After inhalation:**
Supply fresh air or oxygen; call for doctor.
In case of unconsciousness place patient stably in side position for transportation.
· **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
· **After eye contact:**
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
· **After swallowing:** Do not induce vomiting; immediately call for medical help.
· **Information for doctor:**
· **Most important symptoms and effects, both acute and delayed** No further relevant information available.

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· **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

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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.
Use fire fighting measures that suit the environment.
· **Special hazards arising from the substance or mixture** No further relevant information available.
· **Advice for firefighters**
Firefighters use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.
· **Protective equipment:** Protective clothing and respiratory protective device.

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6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation
· **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
· **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
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.
· **Protective Action Criteria for Chemicals**

· **PAC-1:**		
67762-90-7	Synthetic Amorphous Silica	120 mg/m3
9002-84-0	polytetrafluoroethylene	12 mg/m3
80-15-9	α,α -dimethylbenzyl hydroperoxide	0.15 ppm
98-82-8	cumene	50 ppm

· **PAC-2:**		
67762-90-7	Synthetic Amorphous Silica	1,300 mg/m3
9002-84-0	polytetrafluoroethylene	130 mg/m3
80-15-9	α,α -dimethylbenzyl hydroperoxide	1.6 ppm
98-82-8	cumene	300 ppm

· **PAC-3:**		
67762-90-7	Synthetic Amorphous Silica	7,900 mg/m3
9002-84-0	polytetrafluoroethylene	790 mg/m3
80-15-9	α,α -dimethylbenzyl hydroperoxide	9.7 ppm
98-82-8	cumene	730 ppm

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7 Handling and storage

· **Handling:**
· **Precautions for safe handling**
Open and handle receptacle with care.
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
· **Information about protection against explosions and fires:**
Keep ignition sources away - Do not smoke.
Keep container closed when not in use.

· **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:** Store away from oxidizing agents.
· **Further information about storage conditions:**
Keep receptacle tightly sealed.
Protect product from freezing.
Protect from heat and direct sunlight.
· **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:**	
80-15-9 α,α -dimethylbenzyl hydroperoxide	
WEEL	Long-term value: 6 mg/m³, 1 ppm Skin

· **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.
Avoid contact with the eyes.
Avoid contact with the eyes and skin.
· **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.
· **Material of gloves**
Rubber gloves

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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.

· **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.

· **Eye protection:**
Safety glasses with side shields.

Tightly sealed goggles

Face shield over protective glasses or goggles.

· **Body protection:** Protective work clothing

*

9 Physical and chemical properties

· **Information on basic physical and chemical properties**	
· **General Information**	
· **Appearance:**	
Form:	Paste
Color:	White
· **Odor:**	Mild
· **Odor threshold:**	Not determined.
· **pH-value:**	Not determined.
· **Change in condition**	
Melting point:	Undetermined.
Boiling point:	
· **Flash point:**	>93 °C (>199 °F)
· **Flammability (solid, gaseous):**	Not applicable.
· **Ignition temperature:**	
Decomposition temperature:	Not determined.
· **Auto igniting:**	Product is not selfigniting.
· **Danger of explosion:**	Product does not present an explosion hazard.
· **Flammable limits:**	
Lower:	Not determined
Upper:	Not determined
· **Vapor pressure:**	Not determined.
· **Specific gravity at 20 °C (68 °F):**	1.15 g/cm³ (9.597 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.
· **Partition coefficient (n-octanol/water):**	Not determined.
· **Viscosity:**	
Dynamic:	Not determined.

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Kinematic:	Not determined.
· **Solvent content:**	
Organic solvents:	0.0 %
· **Other information**	VOC 146.0 Grams/Liter

*

10 Stability and reactivity

· **Reactivity** No further relevant information available.
· **Chemical stability**
· **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
· **Possibility of hazardous reactions** Polymerization may occur upon loss of inhibitor.
· **Conditions to avoid**
Heat, flames, sparks.
Avoid temperatures above 100F (38C).
Direct sunlight
· **Incompatible materials:**
Reacts with acids.
Reacts with oxidizing agents.
Reacts with alkalis (bases)
Reacts with reactive metals.
Reacts with amines.
· **Hazardous decomposition products:**
Carbon monoxide
Carbon dioxide

*

11 Toxicological information

· **Information on toxicological effects**
· **Acute toxicity:**

· **LD/LC50 values that are relevant for classification:**		
80-15-9 α,α -dimethylbenzyl hydroperoxide		
Oral	LD50	382 mg/kg (rat)
Dermal	LD50	500 mg/kg (rat)
Inhalative	LC50/4 h	220 mg/l (rat)

· **Primary irritant effect:**
· **on the skin:** Skin irritant.
· **on the eye:** Irritating effect.
· **Sensitization:** Skin Contact - Sensitization possible through skin contact.
· **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Irritant

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**		
9002-84-0	polytetrafluoroethylene	3
81-07-2	1,2-benzisothiazol-3(2H)-one 1,1-dioxide	3
98-82-8	cumene	2B

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· **NTP (National Toxicology Program)**

98-82-8	cumene	R

· **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:** At present there are no ecotoxicological assessments.
· **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 be specially treated adhering to official regulations.

· **Uncleaned packagings:**
· **Recommendation:** Disposal must be made according to official regulations.

*

14 Transport information

· **UN-Number** · **DOT, ADN, IMDG, IATA**	not regulated
· **UN proper shipping name** · **DOT, ADN, IMDG, IATA**	not regulated
· **Transport hazard class(es)** · **DOT, ADN, IMDG, IATA** · **Class**	not regulated
· **Packing group** · **DOT, 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:**	Limited Quantities are allowed. Refer to 49 CFR for conditions that apply.

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· **UN "Model Regulation":** not regulated

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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):**

81-07-2	1,2-benzisothiazol-3(2H)-one 1,1-dioxide
80-15-9	α,α -dimethylbenzyl hydroperoxide
98-82-8	cumene

· **TSCA (Toxic Substances Control Act):**
All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements.

· **Proposition 65**

· **Chemicals known to cause cancer:**

98-82-8	cumene

· **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.

· **(DSL) Canada Dosmestic Substance List**
All components of this product are on the DSL(Canada Domestic Substance list) or are exempt from DSL requirements.

· **New Jersey Right-to-Know List:**

81-07-2	1,2-benzisothiazol-3(2H)-one 1,1-dioxide
80-15-9	α,α -dimethylbenzyl hydroperoxide
98-82-8	cumene

· **New Jersey Special Hazardous Substance List:**

80-15-9	α,α -dimethylbenzyl hydroperoxide	F2, R4
98-82-8	cumene	F3, R1

· **Pennsylvania Right-to-Know List:**

9002-84-0	polytetrafluoroethylene
81-07-2	1,2-benzisothiazol-3(2H)-one 1,1-dioxide
80-15-9	α,α -dimethylbenzyl hydroperoxide
98-82-8	cumene

· **Pennsylvania Special Hazardous Substance List:**

81-07-2	1,2-benzisothiazol-3(2H)-one 1,1-dioxide	ES
80-15-9	α,α -dimethylbenzyl hydroperoxide	E
98-82-8	cumene	E

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· **Cancerogenity categories**

· **EPA (Environmental Protection Agency)**		
98-82-8	cumene	D, CBD

· **TLV (Threshold Limit Value established by ACGIH)**

None of the ingredients listed.

· **MAK (German Maximum Workplace Concentration)**

None of the ingredients is listed.

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

· **National regulations:**

· **Water hazard class:** Water hazard class 1 (Self-assessment): slightly hazardous for water.
· **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:** 12/23/2016
· **Date of preparation / last revision** 12/23/2016 / -
· **Abbreviations and acronyms:**
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)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
Acute Tox. 4: Acute toxicity – Category 4
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

SAFETY DATA SHEET

PROPYLENE GLYCOL

ITEM CODES: 506004
506020
506025

SECTION 1. PRODUCT AND COMPANY INFORMATION

Manufacturer Information:

Great North Chemicals Inc.
85 Malmo Court
Maple, Ontario
L6A 1R4
Ph:(905)832-2276
Fax:(905)832-3701

Supplier Information:

LynCar
100 Westcreek Blvd.
Brampton, On
L6T 5V7
PH: 800-263-7011
Fax: 800-459-6227

Chemical Name: 1, 2-propanediol, 1, 2-Dihydroxypropane, Propane-1,2-diol

Chemical Family: C3H8O2

Product Use: Heat transfer fluid, production of polymers, Pharmaceuticals, Antifreeze

24 HOUR EMERGENCY TELEPHONE NUMBER:

1-888-CANUTEC (226-8832) or (613) 996-6666(collect) or *666 cellular

SECTION 2: HAZARDOUS IDENTIFICATION

*** EMERGENCY OVERVIEW ***: No Information

GHS Classification

Symbol(s) of Product: No GHS Symbols Exist

Signal Word: No Signal Word has been assigned

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	CAS-No.	Wt. %	GHS Symbols	GHS Statements
1,2-propanediol	57-55-6	100	No Information	No Information

SECTION 4: FIRST AID MEASURE

FIRST AID - EYE CONTACT:

Immediately flush eyes with water. Flush eyes with water for a minimum of 15 minutes, occasionally lifting and lowering upper lids. Get medical attention promptly. Remove contact lenses if worn.

FIRST AID - SKIN CONTACT:

Wash with soap and water. Get medical attention if irritation develops or persists. Remove contaminated shoes and clothes and clean before reuse.

FIRST AID - INHALATION:

Rescuers should put on appropriate protective gear. Remove from area of exposure. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Keep victim warm. Get immediate medical attention.

FIRST AID - INGESTION:

Small amounts which accidentally enter mouth should be rinsed out until taste of it is gone. None normally required. If uncomfortable, seek medical assistance.

SECTION 5: FIRE FIGHTING MEASURES

UNUSUAL FIRE AND EXPLOSION HAZARDS:

Vapors/dust may form explosive mixture with air. Vapors can travel to a source of ignition and flash back. 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. Also, do not reuse container without commercial cleaning or reconditioning.

SPECIAL FIREFIGHTING PROCEDURES:

As in any fire, wear self-contained breathing apparatus pressure-demand (MSHA/NIOSH approved or equivalent) and full protective gear. Avoid use of solid water streams. Water may be ineffective. Water spray to cool containers or protect personnel. Use with caution. Water runoff can cause environmental damage. Dike and collect water used to fight fire.

EXTINGUISHING MEDIA:

Carbon Dioxide, Dry Chemical, Foam, Water Fog

SECTION 6: ACCIDENTAL RELEASE MEASURES

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

Wear appropriate personal protective equipment. (See Exposure Controls / Personal Protection Section.)Eliminate all ignition sources. Prevent additional discharge of material if able to do so safely. Do not touch or walk through spilled material. Avoid runoff into storm sewers and ditches which lead to waterways.

Ventilate spill area. Stay upwind of spill. Collect spilled materials for disposal. Use only non-combustible material for clean-up. Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container.

SECTION 7: HANDLING AND STORAGE


HANDLING:

Use only in a well ventilated area. Avoid breathing vapor, fumes or mist. Avoid contact with eyes, skin, and clothing. Follow all MSDS/label precautions even after containers are emptied because they may retain product residues.

STORAGE:

Keep away from heat, sparks, and flame. Store containers in a cool, well ventilated place. Keep container closed when not in use. Protect from direct sunlight.

SECTION 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

Ingredients with Occupational Exposure Limits

Chemical Name	ACGIH TLV-TWA	ACGIH-TLV STEL	OSHA PEL-TWA	OSHA PEL-CEILING
1,2-propanediol	N.D.	N.D.	N.D.	N.D.

Personal Protection

RESPIRATORY PROTECTION: NIOSH/MSHA approved respirators may be necessary if airborne concentrations are expected to exceed exposure limits.

SKIN PROTECTION: Wear impervious gloves to prevent contact with the skin.

EYE PROTECTION: Wear safety glasses with side shields (or goggles) and a face shield.

OTHER PROTECTIVE EQUIPMENT: Facilities storing or utilizing this materialshould be equipped with an eyewash facility and a safety shower.

HYGENIC PRACTICES: Do not eat, drink, or smoke in areas where this material is used. Avoid breathing vapors. Remove contaminated clothing and wash before reuse. Wash thoroughly after handling. Wash hands before eating.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Clear, transparent liquid
Physical State:	Liquid
Odor:	Typical
Odor Threshold:	N.D.
Density, g/cm3:	1.037
pH:	7
Freeze Point, °F:	N.D.
Viscosity at 60F	75cps
Solubility in Water:	Miscible
Explosive Limits, vol%:	2.6 - 12.5
Boiling Range, °F:	363 - 372
Flash Point, °F:	219

Evaporation Rate:	0.01
Auto-ignition Temp., °F:	N.D.
Vapor Density:	2.6
Vapor Pressure:	N.D.

SECTION 10: STABILITY AND REACTIVITY

STABILITY:	No Information
CONDITIONS TO AVOID:	Avoid excess heat and sources of ignition.
INCOMPATIBILITY:	Prevent contact with isocyanates. Prevent contact with strong oxidizing agents. Keep away from acids. HAZARDOUS
DECOMPOSITION PRODUCTS:	During combustion carbon monoxide may be formed. During combustion carbon dioxide may be formed.
HAZARDOUS POLYMERIZATION:	No Information

SECTION 11: TOXICOLOGICAL INFORMATION

Information on Toxicological Effects

EFFECTS OF OVEREXPOSURE - INHALATION:

Breathing in the material may irritate the mucous membranes of the nose, throat bronchi and lungs. High doses may cause CNS depression (fatigue, dizziness, possibly loss of concentration with collapse, coma and death in severe cases of over-exposure.

EFFECTS OF OVEREXPOSURE - SKIN CONTACT:

May cause skin irritation.

EFFECTS OF OVEREXPOSURE - EYE CONTACT:

May cause eye irritation.

EFFECTS OF OVEREXPOSURE - INGESTION:

No significant health hazard identified.

EFFECTS OF OVEREXPOSURE - CHRONIC HAZARDS:

No Information

Primary Route(s) of Entry: Eye Contact, Ingestion, 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.	Name according to EEC	Oral LD50, mg/kg	Dermal LD50, mg/kg	Vapor LC50, mg/L
57-55-6	1,2-propanediol	>5000	>5000	>20

SECTION 12: ECOLOGICAL INFORMATION

ECOLOGICAL INFORMATION: No Information

SECTION 13: DISPOSAL CONSIDERATIONS

For more guidance and information contact our Waste Services Division at (262) 658-4000. Always dispose of any waste in accordance with all local, state, and federal regulations.

DISPOSAL METHOD:

Dispose of waste in accordance with all local, state and federal regulations.

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

Wear appropriate personal protective equipment. (See Exposure Controls / Personal P rotection Section.)Eliminate all ignition sources. Prevent additional discharge of material if able to do so safely. Do not touch or walk through spilled material. Avoid runoff into storm sewers and ditches which lead to waterways. Ventilate spill area. Stay upwind of spill. Collect spilled materials for disposal. Use only non-combustible material for cleanup. Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container.

SECTION 14: TRANSPORTATION INFORMATION

TDG/DOT shipping: Not Regulated

SECTION 15: REGULATORY INFORMATION

CANADIAN WHMIS:

This SDS has been prepared in compliance with Controlled Product Regulations.

WHMIS Class: No Information

SECTION 16: OTHER INFORMATION

Health	Flammability	Reactivity	Personal Protection
0	1	0	X

Prepared by: Great North Chemicals, Quality Department,
Tel : 1-905-832-2276 ext 233 by Sat Anand

Date of Preparation: June 1, 2017
Date of Revision: n/a

The information contained herein is offered only as a guide to the handling of this specific material and has been prepared in good faith by technically knowledgeable personnel. It is not intended to be all inclusive and the manner and conditions of use and handling may involve other and additional considerations, no warranty of any kind is given or implied and Great North Chemicals Inc. 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.

DURACELL

Article Information Sheet (AIS)

Formerly known as MSDS/PSDS document for Shippers

This Article Information Sheet (AIS) provides relevant battery information to retailers, consumers, OEMs and others users requesting a GHS-compliant SDS. Articles, such as batteries, are exempt from GHS SDS classification criteria. The GHS criteria is not designed or intended to be used to classify the physical, health and environmental hazards of an article. Branded consumer batteries are defined as electro-technical devices. The design, safety, manufacture, and qualification of branded consumer batteries follow ANSI and IEC battery standards. This document is based on principles set forth in the following hazard communication approaches: ANSI Z-400.1, GHS, JAMP AIS, and IEC 62474.

1. Document Information	
Document Name	**Duracell Alkaline Batteries (Major and Specialty Cells)**
Document ID	AIS-ALK
Issue Date	1-May-15
Preparer	Product Safety & Regulatory
Last Revision	7/22/2016
Information Contact	moquet.l@duracell.com
2. Company Information	
Name & Address	Duracell US Operations, Inc., 14 Research Drive, Bethel, CT USA 06801
Telephone	(203) 796- 4430
Website	www.duracell. com
Consumer Relations	North America: 1-800-551-2355 (9:00 AM - 5:00 PM EST)
3. Article Information	
Description	Duracell branded consumer alkaline battery
Product Category	Electro-technical device
Use	Portable power source for electronic devices
Global sub-brands (Retail)	Coppertop, Plus, Quantum, Simply, Turbo, Ultra, Basic, TurboMax
Global sub-brands (B2B)	Procell, Industrial, OEM/OEA
Major Cells - Sizes/Part Numbers	(AA) MN/MX 1500; (AAA) MN/MX 2400; (AAAA) MN/MX 2500; (C) MN/MX 1400; (D) MN/MX 1300; (9V) MN/MX1604
Specialty Cells - Sizes/Part Numbers	MN11, MN21, MN27, MN175, PX76 (LR44), PX28, PX625, (LR09), LR43, LR54, N, J, 4.5V, 625A
Lanterns - Part Numbers	MN903, MN908, MN915, MN918; MN1203
Principles of Operation	A battery powers a device by converting stored chemical energy into electrical energy.
Representative Product Images	   
	Major Cells **Major Cells** **Lantern** **Specialty**
4. Article Construction	
Applicable Battery Industry Standards	ANSI C18.1M Part 1, ANSI C18.1M Part 2, ANSI C18.4, IEC 60086-1, IEC 60086-2, IEC 60086-5
Electro-technical System	Alkaline Manganese Dioxide
Electrode - Negative	Zinc (CAS # 7440-66-6); 10-25%
Electrode - Positive	Manganese Dioxide (CAS # 1313-13-9); 35-40%
Electrolyte	Alkali Metal Hydroxide (aqueous potassium hydroxide - CAS # 1310-58-3); 5-10%
Materials of Construction - Can	Nickel Plated Steel
Declarable Substances (IEC 62474 Criteria 1)	None
Mercury Free Battery (ANSI C18.4M <5ppm)	Yes
Small Cell or Battery (ANSI C18.1M Part 2; IEC 60086-5)	Sizes: AAA and Specialty Cells fit inside a specially designed test cylinder 2.25 inches (57.1mm) long by 1.25 inches (31.70 mm) wide.

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Formerly known as MSDS/PSDS document for Shippers

5. Health & Safety	
Ingestion/Small Parts Warning	Required for Small Cell or Battery (Sizes: AAA and Specialty Cells): Keep away from children. If swallowed, consult a physician immediately.
Normal Conditions of Use	Exposure to contents inside the sealed battery will not occur unless the battery leaks, is exposed to high temperatures, or is mechanically abused.
Note to Physician	A damaged battery will release concentrated and caustic potassium hydroxide.
First Aid - If swallowed	Do not induce vomiting. Seek medical attention immediately. USA CALLS ONLY - CALL 24-HOUR NATIONAL BATTERY INGESTION HOTLINE: (202) 625-3333 - COLLECT.
First Aid - Eye Contact	Flush with water for at least 15 minutes. Seek medical care if irritation persists.
First Aid - Skin Contact	Remove contaminated clothing. Wash skin with soap and water. Seek medical care if irritation persists.
First Aid - Inhalation	Remove to fresh air.
Battery Safety Standards & Testing	Duracell batteries meet the requirements of ANSI C18. 1M Part 2 and IEC 60086-5. These standards specify tests and requirements for alkaline batteries to ensure safe operation under normal use and reasonably foreseeable misuse. The test regimes assess three conditions of safety. These are: **1-Intended use simulation:** Partial use, vibration, thermal shock, and mechanical shock **2-Reasonably foreseeable misuse:** Incorrect installation, external short-circuit, free fall (user-drop), over-discharge, and crush **3-Design consideration:** Thermal abuse, mold stress
Precautionary Statements	**CAUTION:** Batteries may explode or leak, and cause burn injury, if recharged, disposed of in fire, mixed with a different battery type, inserted backwards or disassembled. Replace all used batteries at the same time. Do not carry batteries loose in your pocket or purse. Do not remove the battery label. Keep small batteries (i.e., AAA) away from children. If swallowed, consult a physician at once.
6. Fire Hazard & Firefighting	
Fire Hazard	Batteries may rupture or leak if involved in a fire.
Extinguishing Media	Use any extinguishing media appropriate for the surrounding area.
Fires Involving Large Quantities of Batteries	Large quantities of batteries involved in a fire will rupture and release caustic potassium hydroxide. Firefighters should wear self-contained breathing apparatus and protective clothing.
7. Handling & Storage	
Handling Precautions	Avoid mechanical and electrical abuse. Do not short circuit or install incorrectly. Batteries may rupture or vent if disassembled, crushed, recharged or exposed to high temperatures. Install batteries in accordance with equipment instructions.
Storage Precautions	Store batteries in a dry place at normal room temperature. Refrigeration does not make them last longer.
Spills of Large Quantities of Loose Batteries (unpackaged)	Notify spill personnel of large spills. Irritating and flammable vapors may be released from leaking or ruptured batteries. Spread batteries apart to stop shorting. Eliminate all ignition sources. Evacuate area and allow vapors to dissipate. Clean-up personnel should wear appropriate PPE to avoid eye and skin contact and inhalation of vapors or fumes. Increase ventilation. Carefully collect batteries and place in appropriate container for disposal. Remove any spilled liquid with absorbent material and contain for disposal.
8. Disposal Considerations (GHS Section 13)	
Collection & Proper Disposal	Dispose of used (or excess) batteries in compliance with federal, state/provincial and local regulations. Do not accumulate large quantities of used batteries for disposal as accumulations could cause batteries to short-circuit. Do not incinerate. In countries, such as Canada and the EU, where there are regulations for the collection and recycling of batteries, consumers should dispose of their used batteries into the collection network at municipal depots and retailers. They should not dispose of batteries with household trash.

DURACELL

Article Information Sheet (AIS)

Formerly known as MSDS/PSDS document for Shippers

USA EPA RCRA (40 CFR 261)	Classified as non-hazardous waste (not ignitable, corrosive, reactive or toxic). Federal Universal Waste Regulations (40 CFR 273) do not apply. State requirements may be more stringent than Federal.
California Universal Waste Rule (Cal. Code Regs. Title 22, Div. 4.5, Ch. 23)	California prohibits disposal of batteries as trash (including household trash).
9. Transport Information (GHS Section 14)	
Regulatory Status	Not regulated. Alkaline batteries (sometimes referred to as "Dry Cell" or "household" batteries) are not listed or regulated as dangerous goods under IATA Dangerous Goods Regulations, ICAO Technical Instructions, IMDG Code, UN Model Regulations, U.S. Hazardous Materials Regulations (49 CFR), and UNECE ADR.
UN Identification Number/ Shipping Name	None - Not Required
Special Provision (SP) Conformance	Special regulatory provisions require batteries to be packaged in a manner that prevents the generation of a dangerous quantity of heat and short circuits. Shippers can prepare batteries by taping the terminals, individually packaging batteries, or otherwise segregating the batteries to prevent risk of creating a short circuit. Batteries shipped in original unopened Duracell packaging is compliant.
US DOT SP	49 CFR 172.102 Special Provision 130
Air Transport (IATA/ICAO) SP	Special Provision A123 (57th Edition - 2016). NOTE: The words "NOT RESTRICTED" and "SPECIAL PROVISION A123" must be included on the description of the substance on the Air Waybill, when air way-bill is issued.
International Maritime Dangerous Goods (IMDG)	Not regulated/No requirements
Passenger Air Travel	No restrictions
Emergency Transportation Hotline	**CHEMTREC 24-Hour Emergency Response Hotline** **Within the United States call +703-527-3887** **Outside the United States, call +1 703-527-3887 (Collect)**
10. Regulatory Information (GHS Section 15)	
10a. Battery Requirements	
USA EPA Mercury Containing & Rechargeable Battery Management Act of 1996	During the manufacturing process, no mercury is added.
EU Battery Directive 2006/66/EC & amendment 2013/56/EU	Compliant with marking and substance restrictions for mercury (<0.0005%); cadmium (<0.0020%)l and lead (<0.0040%). Global labels are marked with the special collection symbol and the EU qualifier in accordance with EU Battery Directive 2006/66/EC, Article 11, Paragraph 1 on batteries and accumulators and waste batteries and accumulators (Annex II).
P.R.C. Provision on Mercury Content Limitation for Batteries (GB 8897.5-2005, MOD, Section 9.1(e))	
P.R.C Mercury Free Battery (GB 24427-2009) < 1 ppm	Yes
10b. General Requirements	
USA CPSIA 2008 (PL. 11900314)	Exempt
USA CPSC FHSA (16 CFR 1500)	Consumer batteries are not listed as a hazardous product.
USA EPA TSCA Section 13 (40 CFR 707.20)	For customs clearance purpose, batteries are defined as an "Article".
USA EPA RCRA (40 CFR 261)	Classified as non-hazardous waste (not ignitable, corrosive, reactive or toxic). Federal Universal Waste Regulations (40 CFR 273) do not apply. State requirements may be more stringent than Federal.

DURACELL

Article Information Sheet (AIS)

Formerly known as MSDS/PSDS document for Shippers

California Prop 65	No warning required per 3rd party assessment.
CANADA Products Containing Mercury Regulations SOR/20140254	Mercury free
EU REACH SVHC's (169 Substances) Candidate List June 2016)	No listed substances are present (>0.01% w/w)
EU REACH Article 31	SDS is not required consumer alkaline batteries.
10c. Regulatory Definitions - Articles	
USA OSHA	29 CFR 1910.1200(b)(6)(v)
USA TSCA	40 CFR 704.3; 710.2(3)(c); and [19 CFR 12.1209a)]
EU REACH	Title 1 - Chapter 2 - Article 3(3)
GHS	Section 1.3.2.1
11. Other Information	
11a. Certification & 3rd Party Approvals	
UL (UTGT2.S50939 Single Multiple Station Smoke Alarms - Component)	AA, 9V Certification Standard: ANSI/UL 217 Single & Multiple Station Smoke Alarms
11b. AIS Hazard Communication Approaches (consulted in developing this document):	
Globally Harmonized System (GHS)	GHS SDS requirements and classification criteria do not apply to articles or products (such as batteries) that have a fixed shape, which are not intended to release a chemical. The article exemption is found in Section 1.3.2.1.1 of the GHS and reads: ***The GHS applies to pure substances and their dilute solutions and to mixtures. "Articles" as defined by the Hazard Communication Standard (29 CFR 1900.1200) of the OSHA of the USA, or by similar definition, are outside the scope of the system."***
Joint Article Management Promotion Consortium JAMP	JAMP is a Japanese Industry Association who developed the concept of an Article Information Sheet as a supply chain tool to share and communicate chemical information in articles. The AIS authoring process is based on "declarable" substances to meet global regulatory requirements as well as substances to be reported by GADSL, JIG, etc.
IEC 62474 Ed. 1.0 B:2012 Material Declaration for Products of and for the Electro-technical Industry	An international standard that came into effect in March 2012 concerning declaration for electrical and electronic products. IEC 6274 replaces the defunct Joint Industry Guide – Material Declaration for Electro-technical Products (JIG-101-Ed 4.1 (May 21, 2012)
IEC 62474 Database - Publically available online (maintained by TC11: Environmental Standardization for electrical and electronic products and systems.	The general principle for a substance to be included in the database as a declarable substance is: 1) existing national laws or regulations in an IEC member country that are relevant to Electro-technical products and that prohibit or restrict substances, or that have a labeling, communication, reporting or notification requirement, and 2) applying IEC 62474 criteria results in identification of declarable substance.
ANSI Z 400.1/Z19.1 (2010)	2.1 Scope: Applies to preparation of SDSs for hazardous chemicals used under occupational conditions. Does not address how the standard may be applied to articles. It presents basic information on how to develop and write a SDS. Additional information is provided to help comply with state and federal environmental and safety laws and regulations. Elements of the standard may be acceptable for International use.

GHS SAFETY DATA SHEET

Date Revised: SEPT 2015

Spears® FS-5 One-Step Low VOC Cement for CPVC Fire Sprinkler Systems Supersedes: JUNE 2011

SECTION I - PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: **Spears® FS-5 One-Step Low VOC Cement CPVC Fire Sprinkler Systems**

PRODUCT USE: Solvent Cement for CPVC Plastic Pipe

MANUFACTURER: Spears® Manufacturing Company
15853 Olden Street, Sylmar, CA 91342
Tel. 818-364-1611

SUPPLIER:

EMERGENCY: Transportation/Medical Issues: Tel. 800-535-5053 or 352-323-3500 (outside of USA) INFOTRAC

SECTION 2 - HAZARDS IDENTIFICATION

GHS CLASSIFICATION:

Health		Environmental		Physical	
Acute Toxicity:	Category 4	Acute Toxicity:	None Known	Flammable Liquid	Category 2
Skin Irritation:	Category 3	Chronic Toxicity:	None Known		
Skin Sensitization:	NO				
Eye:	Category 2B				

GHS LABEL: 

Signal Word: **Danger**

WHMIS CLASSIFICATION: CLASS B, DIVISION 2

Hazard Statements	Precautionary Statements
H225: Highly flammable liquid and vapor	P210: Keep away from heat/sparks/open flames/hot surfaces - No smoking
H319: Causes serious eye irritation	P261: Avoid breathing dust/fume/gas/mist/vapors/spray
H332: Harmful if inhaled	P280: Wear protective gloves/protective clothing/eye protection/face protection
H335: May cause respiratory irritation	P337+P313: Get medical advice/attention
H336: May cause drowsiness or dizziness	P403+P233: Store in a well ventilated place. Keep container tightly closed
H351: Suspected of causing cancer	P501: Dispose of contents/container in accordance with local regulation
EUH019: May form explosive peroxides	

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

	CAS#	EINECS #	REACH Pre-registration Number	CONCENTRATION % by Weight
Tetrahydrofuran (THF)	109-99-9	203-726-8	05-2116297729-22-0000	30 - 60
Methyl Ethyl Ketone (MEK)	78-93-3	201-159-0	05-2116297728-24-0000	2 - 25
Cyclohexanone	108-94-1	203-631-1	05-2116297718-25-0000	5 - 15
Acetone	67-64-1	200-662-2	05-2116297713-35-0000	1 - 5

All of the constituents of this adhesive product are listed on the TSCA inventory of chemical substances maintained by the US EPA, or are exempt from that listing.

* Indicates this chemical is subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (40CFR372).

# indicates that this chemical is found on Proposition 65's List of chemicals known to the State of California to cause cancer or reproductive toxicity.

SECTION 4 - FIRST AID MEASURES

Contact with eyes: Flush eyes immediately with plenty of water for 15 minutes and seek medical advice immediately.

Skin contact: Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water. If irritation develops, seek medical advice.

Inhalation: Remove to fresh air. If breathing is stopped, give artificial respiration. If breathing is difficult, give oxygen. Seek medical advice.

Ingestion: Rinse mouth with water. Give 1 or 2 glasses of water or milk to dilute. Do not induce vomiting. Seek medical advice immediately.

Likely Routes of Exposure: Inhalation, Eye and Skin Contact

Acute symptoms and effects:

Inhalation: Severe overexposure may result in nausea, dizziness, headache. Can cause drowsiness, irritation of eyes and nasal passages.

Eye Contact: Vapors slightly uncomfortable. Overexposure may result in severe eye injury with corneal or conjunctival inflammation on contact with the liquid.

Skin Contact: Liquid contact may remove natural skin oils resulting in skin irritation. Dermatitis may occur with prolonged contact.

Ingestion: May cause nausea, vomiting, diarrhea and mental sluggishness.

Chronic (long-term) effects: Category 2 Carcinogen

SECTION 5 - FIREFIGHTING MEASURES

Suitable Extinguishing Media: Dry chemical powder, carbon dioxide gas, foam, Halon, water fog.

Unsuitable Extinguishing Media: Water spray or stream.

Exposure Hazards: Inhalation and dermal contact.

Combustion Products: Oxides of carbon, hydrogen chloride and smoke.

	HMIS	NFPA	0-Minimal
Health	2	2	1-Slight
Flammability	3	3	2-Moderate
Reactivity	0	0	3-Serious
PPE	B		4-Severe

Protection for Firefighters: Self-contained breathing apparatus or full-face positive pressure airline masks.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Personal precautions: Keep away from heat, sparks and open flame.
Provide sufficient ventilation, use explosion-proof exhaust ventilation equipment or wear suitable respiratory protective equipment.
Prevent contact with skin or eyes (see section 8).

Environmental Precautions: Prevent product or liquids contaminated with product from entering sewers, drains, soil or open water course.

Methods for Cleaning up: Clean up with sand or other inert absorbent material. Transfer to a closable steel vessel.

Materials not to be used for clean up: Aluminum or plastic containers.

SECTION 7 - HANDLING AND STORAGE

Handling: Avoid breathing of vapor, avoid contact with eyes, skin and clothing.
Keep away from ignition sources, use only electrically grounded handling equipment and ensure adequate ventilation/fume exhaust hoods.
Do not eat, drink or smoke while handling.

Storage: Store in ventilated room or shade below 33 °C (90 °F) and away from direct sunlight.
Keep away from ignition sources and incompatible materials: caustics, ammonia, inorganic acids, chlorinated compounds, strong oxidizers and isocyanates.
Follow all precautionary information on container label, product bulletins and solvent cementing literature.

SECTION 8 - PRECAUTIONS TO CONTROL EXPOSURE / PERSONAL PROTECTION

EXPOSURE LIMITS:

Component	ACGIH TLV	ACGIH STEL	OSHA PEL	OSHA STEL:	OSHA PEL-Ceiling	CAL/OSHA PEL	CAL/OSHA Ceiling	CAL/OSHA STEL
Tetrahydrofuran (THF)	50 ppm	100 ppm	200 ppm	N/E	N/E	200 ppm	N/E	250 ppm
Methyl Ethyl Ketone (MEK)	200 ppm	300 ppm	200 ppm	N/E	N/E	200 ppm	N/E	300 ppm
Cyclohexanone	20 ppm	50 ppm	50 ppm	N/E	N/E	25 ppm	N/E	N/E
Acetone	500 ppm	750 ppm	1000 ppm	N/E	N/E	500 ppm	3000 ppm	750 ppm

Engineering Controls: Use local exhaust as needed.
Monitoring: Maintain breathing zone airborne concentrations below exposure limits.
Personal Protective Equipment (PPE):
Eye Protection: Avoid contact with eyes, wear splash-proof chemical goggles, face shield, safely glasses (spectacles) with brow guards and side shields, etc. as may be appropriate for the exposure.
Skin Protection: Prevent contact with the skin as much as possible. Butyl rubber gloves should be used for frequent immersion. Use of solvent-resistant gloves or solvent-resistant barrier cream should provide adequate protection when normal adhesive application practices and procedures are used for making structural bonds.
Respiratory Protection: Prevent inhalation of the solvents. Use in a well-ventilated room. Open doors and/or windows to ensure airflow and air changes. Use local exhaust ventilation to remove airborne contaminants from employee breathing zone and to keep contaminants below levels listed above. With normal use, the Exposure Limit Value will not usually be reached. When limits approach, use respiratory protection equipment.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Red, heavy syrupy liquid
Odor: Ether-Like
pH: Not Applicable
Melting/Freezing Point: -108.5 °C (-163.3 °F) Based on first melting component: THF
Boiling Point: 66 °C (151 °F) Based on first boiling component: THF
Flash Point: -20 °C (-4 °F) TCC based on THF
Specific Gravity: 0.857 ± 0.01 @ 23°C ± 2° (73°F ± 3.6°)
Solubility: Solvent portion soluble in water. Resin portion separates out.
Partition Coefficient n-octanol/water: Not Available
Auto-ignition Temperature: 321 °C (610 °F) based on THF
Decomposition Temperature: Not Applicable
VOC Content: When applied as directed, per SCAQMD Rule 1168, Test Method 316A,VOC content is: ≤ 490 g/l.

Odor Threshold: 0.88 ppm (Cyclohexanone)
Boiling Range: 66°C (151°F) to 156°C (313°F)
Evaporation Rate: > 1.0 (BUAC = 1)
Flammability: Category 2
Flammability Limits: **LEL:** 1.1% based on Cyclohexanone **UEL:** 11.8% based on THF
Vapor Pressure: 129 mm Hg @ 20 °C (68 °F) based on THF
Vapor Density: >2.0 (Air = 1)
Other Data: Viscosity: Heavy bodied

SECTION 10 - STABILITY AND REACTIVITY

Stability: Stable
Hazardous decomposition products: None in normal use. When forced to burn, this product gives off oxides of carbon, hydrogen chloride and smoke.
Conditions to avoid: Keep away from heat, sparks, open flame and other ignition sources.
Incompatible Materials: Oxidizers, strong acids and bases, amines, ammonia

SECTION 11 - TOXICOLOGICAL INFORMATION

Toxicity:	LD_{50}	LC_{50}	Target Organs
Tetrahydrofuran (THF)	Oral: 2842 mg/kg (rat)	Inhalation 3 hrs. 21,000 mg/m³ (rat)	STOT SE3
Methyl Ethyl Ketone (MEK)	Oral: 2737 mg/kg (rat), Dermal: 6480 mg/kg (rabbit)	Inhalation 8 hrs. 23,500 mg/m³ (rat)	STOT SE3
Cyclohexanone	Oral: 1535 mg/kg (rat), Dermal: 948 mg/kg (rabbit)	Inhalation 4 hrs. 8,000 PPM (rat)	
Acetone	Oral: 5800 mg/kg (rat)	Inhalation 50,100 mg/m³ (rat)	STOT SE3

Reproductive Effects	Teratogenicity	Mutagenicity	Embryotoxicity	Sensitization to Product	Synergistic Products
Not Established	Not Established	Not Established	Not Established	Not Established	Not Established

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity: None Known
Mobility: In normal use, emission of volatile organic compounds (VOC's) to the air takes place, typically at a rate of ≤ 490g/l.
Degradability: Biodegradable
Bioaccumulation: Minimal to none.

SECTION 13 - WASTE DISPOSAL CONSIDERATIONS

Follow local and national regulations. Consult disposal expert.

SECTION 14 - TRANSPORT INFORMATION

Proper Shipping Name: Adhesives
Hazard Class: 3
Secondary Risk: None
Identification Number: UN 1133
Packing Group: PG II
Label Required: Class 3 Flammable Liquid
Marine Pollutant: NO

EXCEPTION for Ground Shipping
DOT Limited Quantity: Up to 1L per inner packaging, 30 kg gross weight per package.
Consumer Commodity: Depending on packaging, these quantities may qualify under DOT as "ORM-D"

TDG INFORMATION

TDG CLASS:	FLAMMABLE LIQUID 3
SHIPPING NAME:	ADHESIVES
UN NUMBER/PACKING GROUP:	UN 1133, PG II

SECTION 15 - REGULATORY INFORMATION

Precautionary Label Information: Highly Flammable, Irritant
Symbols: F, Xi
Risk Phrases: R11: Highly flammable.
R36/37: Irritating to eyes and respiratory system.
R66: Repeated exposure may cause skin dryness or cracking
R67: Vapors may cause drowsiness and dizziness
Safety Phrases: S2: Keep out of the reach of children
S9: Keep container in a well-ventilated place.
S16: Keep away from sources of ignition - No smoking.
S25: Avoid contact with eyes
S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S33: Take precautionary measures against static discharges.

Ingredient Listings: USA TSCA, Europe EINECS, Canada DSL, Australia AICS, Korea ECL/TCCL, Japan MITI (ENCS)

SECTION 16 - OTHER INFORMATION

Specification Information:
Department issuing data sheet: Environmental Health & Safety
E-mail address: EHSInfo@SpearsMfg.net
Training necessary: Yes, training in practices and procedures contained in product literature.
Reissue date / reason for reissue: 09/01/15 / Updated GHS Standard Format
Intended Use of Product: Solvent Cement for CPVC Plastic Pipe

All ingredients are compliant with the requirements of the European Directive on RoHS (Restriction of Hazardous Substances).

This product is intended for use by skilled individuals at their own risk. The information contained herein is based on data considered accurate based on current state of knowledge and experience. However, no warranty is expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof.

STANLEY

SAFETY DATA SHEET

Prepared to U.S. OSHA, CMA, ANSI, Canadian WHMIS Standards, European Union CLP EC 1272/2008 and the Global Harmonization Standard

PART I *What is the material and what do I need to know in an emergency?*

1 – IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

IDENTIFICATION of the SUBSTANCE or PREPARATION:

TRADE NAME (AS LABELED):	**STANLEY CHALKS**
SYNONYMS:	Stanley Black Chalk; Stanley Blue Chalk Stanley Red Chalk; Stanley White Chalk
CHEMICAL NAME/CLASS:	Calcium Carbonate/Pigment/Silica Mixtures
RELEVANT USES of the MIXTURE:	Chalks
USES ADVISED AGAINST:	Other than Relevant Use

SUPPLIER OF THE SAFETY DATA SHEET:

U.S. MANUFACTURER'S NAME:	**STANLEY WORKS**
ADDRESS:	480 Myrtle Street New Britain, CT 06053
BUSINESS PHONE:	1-800-262-2161
EUROPEAN SUPPLIER/IMPORTER'S NAM:	
ADDRESS:	
BUSINESS PHONE:	
EMERGENCY PHONE:	CHEMTREC: 1-800-424-9300 (U.S., Canada, Puerto Rico. U.S. Virgin Islands) +1-703-527-3887 (outside areas above, call collect)
DATE OF PREPARATION:	December 11, 2007
DATE OF REVISION:	July 18, 2013

ALL WHMIS required information is included in appropriate sections based on the ANSI Z400.1-2010 format. This material has been classified in accordance with the hazard criteria of the CPR and the SDS contains all the information required by the CPR. The material is also classified per all applicable EU Directives through EC 1907: 2006, the European Union CLP EC 1272/2008 and the Global Harmonization Standard.

2. HAZARD IDENTIFICATION

GLOBAL HARMONIZATION LABELING AND CLASSIFICATION: Classified in accordance with CLP Regulation (EC) 1272/2008.

Classification: Carcinogenic Cat. 2
Signal Word: Warning
Hazard Statement Codes: H351; For Blue Chalk Only: EUH032
Precautionary Statement Codes: P201, P202, P280, P308 + P313, P405, P501
Hazard Symbol/Pictogram: GHS08

EU 67/548/EEC LABELING AND CLASSIFICATION: Classified in accordance with the European Community Council Directive 67/548/EEC or subsequent Directives.

Classification: Carcinogenic Cat. 3
Risk Phrase Codes: R45; For Blue Chalk Only: R32
Safety Phrase Codes: S(1/2), S22, S25, S36/37/39, S38, S45, S53
Hazard Symbol: Xn

See Section 16 for full text of Classification

EMERGENCY OVERVIEW: Product Description: These products are colored, finely powdered, odorless chalks. **Health Hazards:** Inhalation of dusts from this product may irritate the respiratory system. Skin and eye contact may cause mechanical abrasion. These chalks contain Crystalline Silica, a known human carcinogen by inhalation. **Flammability Hazards:** These chalks are not flammable. Finely divided dusts from these products can form explosive mixtures in air. If involved in a fire, these products may decompose to form iron oxides, aluminum oxides, silicon dioxide, sulfur dioxide, magnesium oxides, carbon oxides and calcium oxides. **Reactivity Hazards:** These chalks are not normally reactive. For the Blue Chalk, contact with acids can release toxic hydrogen sulfide. **Environmental Hazards:** These products are not expected to pose significant harm to the environment, however all release to the environment should be avoided. **Emergency Recommendations:** Emergency responders must wear the personal protective equipment suitable for the situation to which they are responding.

3. COMPOSITION and INFORMATION ON INGREDIENTS

CHEMICAL NAME	CAS #	EINECS #	% w/w	LABEL ELEMENTS EU Classification (67/548/EEC) GHS & EU Classification (1272/2008 EC) Risk Phrases/Hazard Statements
Limestone/Calcium Carbonate ($CaCO_3$)	1317-65-3	215-279-6	70-100%	EU 67/548: Classification: Not applicable. GHS & EU 1272/2008: Classification: Not applicable.

See Section 16 for full text of Classification

3. COMPOSITION and INFORMATION ON INGREDIENTS (Continued)

CHEMICAL NAME	CAS #	EINECS #	% w/w	LABEL ELEMENTS EU Classification (67/548/EEC) GHS & EU Classification (1272/2008 EC) Risk Phrases/Hazard Statements
Crystalline Silica	14808-60-7	238-878-4	0.1-1.5%	SELF-CLASSIFICATION EU 67/548 Classification: Carcinogenic Cat. 3 Risk Phrase Codes: R45 GHS and EU 1272/2008 Classification: Carcinogenic Cat. 2 Hazard Codes: H351
The following are pigments in each of the chalks:				
Blue Chalk: Sodium Alumino Sulphosilicate/C.I. Pigment Blue 29	57455-37-5	Unlisted	20-30%	SELF-CLASSIFICATION EU 67/548 Classification: None Risk Phrase Codes: R32 GHS and EU 1272/2008 Classification: None Supplemental Hazard Codes: EUH032
Red Chalk: Hematite/Iron Oxide (Fe_2O_3)	1317-60-8	215-275-4	20-30%^	EU 67/548: Classification: Not applicable. GHS & EU 1272/2008: Classification: Not applicable.
Black Chalk: Carbon Black	1333-86-4	215-609-9	17-23%	EU 67/548: Classification: Not applicable. GHS & EU 1272/2008: Classification: Not applicable.
White Chalk: Magnesium Carbonate ($MgCo_3$)	546-93-0	208-915-6	0-2%	EU 67/548: Classification: Not applicable. GHS & EU 1272/2008: Classification: Not applicable.

See Section 16 for full text of Classification

PART II *What should I do if a hazardous situation occurs?*

4. FIRST-AID MEASURES

DESCRIPTION OF FIRST AID MEASURES: Contaminated individuals must be taken for medical attention if any adverse effects occur. Remove contaminated clothing and shoes. Take a copy of this SDS to health professional with victim. Wash clothing and thoroughly clean shoes before reuse.

SKIN EXPOSURE: If skin contact with this material occurs, flush affected area with water. Minimum flushing is for 20 minutes. The contaminated individual must seek medical attention if any adverse effects occur after flushing.

EYE EXPOSURE: If this material enters the eyes, open contaminated individual's eyes while under gently running water. Use sufficient force to open eyelids. Have contaminated individual "roll" eyes. Minimum flushing is for 20 minutes. Contaminated individual must seek medical attention if adverse effect occurs or continues after flushing.

INHALATION: If dusts of this material are inhaled, remove victim to fresh air. The contaminated individual must seek medical attention if any adverse effects occur.

INGESTION: If this material is swallowed, CALL PHYSICIAN OR POISON CONTROL CENTER FOR MOST CURRENT INFORMATION. If professional advice is not available, seek immediate medical attention. If alert, victim should drink up to three glasses of water. Do not induce vomiting. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or unable to swallow. If victim is convulsing, maintain an open airway and obtain emergency medical attention.

IMPORTANT SYMPTOMS AND EFFECTS: See Sections 2 (Hazard Identification) and 11 (Toxicological Information).

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Preexisting respiratory problems, dermatitis, and other skin disorders may be aggravated by exposure to this product.

INDICATION OF IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT IF NEEDED: Treat symptoms and eliminate exposure.

5. FIRE-FIGHTING MEASURES

FLASH POINT: Not applicable.

AUTOIGNITION TEMPERATURE: Not applicable.

FLAMMABLE LIMITS (in air by volume, %): Not applicable.

FIRE EXTINGUISHING MEDIA: Unless incompatibilities exist for surrounding materials, carbon dioxide, water spray, 'ABC' type chemical extinguishers, foam, dry chemical and halon extinguishers can be used to fight fires involving this material.

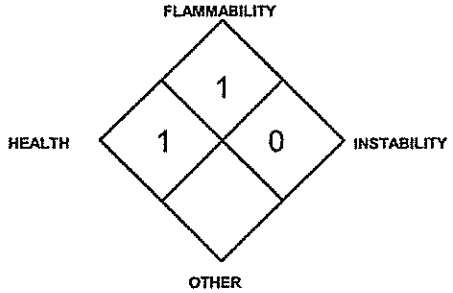
UNSUITABLE FIRE EXTINGUISHING MEDIA: None known.

SPECIAL HAZARDS ARISING FROM THE SUBSTANCE: Finely divided dusts from these products can form explosive mixtures in air. If involved in a fire, these products may decompose to form iron oxides, aluminum oxides, silicon dioxide, sulfur dioxide, magnesium, carbon and calcium oxides.

Explosion Sensitivity to Mechanical Impact: Not sensitive.

Explosion Sensitivity to Static Discharge: Finely divided dusts from this material pose a hazard of an air/dust explosion in presence of an ignition source.

NFPA RATING



Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

5. FIRE-FIGHTING MEASURES (Continued)

SPECIAL PROTECTIVE ACTIONS FOR FIRE-FIGHTERS: Structural fire-fighters must wear Self-Contained Breathing Apparatus and full protective equipment. Move containers from fire area if it can be done without risk to personnel. Water fog or spray can also be used to cool fire-exposed containers. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas. Rinse contaminated equipment thoroughly before returning such equipment to service.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES: It is suggested that kits include a respirator, chemical splash goggles, two pairs of gloves, two sheets (12" x 12") of absorbent material, 250-mL and 1-liter spill control pillows, a small scoop to collect glass fragments (if applicable) and two large waste disposal bags. Absorbents should be able to be incinerated. Avoid generating airborne dusts of this material during spill response procedures as described below.

PROTECTIVE EQUIPMENT:

Small Spills/Spills in Hoods: Personnel wearing nitrile or other appropriate gloves, labcoat or other protective clothing and eye protection should immediately clean incidental spills of less than 5 g.

Large Spills: Use proper protective equipment, including double nitrile or appropriate gloves, and protective clothing (e.g., disposable Tyvek coveralls). When there is any danger of airborne dusts being generated, use a full-face respirator equipped with a High Efficiency Particulate (HEPA) filter. Self-Contained Breathing Apparatus (SCBA) can be used instead of an air-purifying respirator.

METHODS FOR CLEAN-UP AND CONTAINMENT:

Cleanup of Small Spills: Solids should be gently covered with wet absorbent pads. Clean spill with pad and dispose of properly. Decontaminate the spill area (three times) using a bleach and detergent solution and then rinse with clean water.

Large Spills: Restrict access to the spill areas. For spills of greater than 5 g, be sure not to generate dusts by gently covering with damp absorbent sheets, spill-control pads, pillows, cloths, or towels. The dispersion of particles into surrounding air and the possibility of inhalation is a serious matter and should be treated as such. Do not apply chemical in-activators as they may produce hazardous by-products. Sweep up or vacuum spilled solid (an explosion-proof vacuum should be used), avoiding the generation of airborne dusts. Decontaminate the area thoroughly.

All Spills: Use procedures described above and then place all spill residues in an appropriate, labeled container and seal. Move to a secure area. Dispose of in accordance with Federal, State, and local hazardous waste disposal regulations (see Section 13, Disposal Considerations). For spills on water, contain, minimize dispersion and collect. Dispose of recovered material and report spill per regulatory requirements.

ENVIRONMENTAL PRECAUTIONS: Prevent material from entering sewer or confined spaces, waterways, soil or public waters. Do not flush to sewer. For spills on water, contain, minimize dispersion and collect.

REFERENCE TO OTHER SECTIONS: Review Sections 2, 8, 11, & 12 before proceeding with cleanup. See Section 13, Disposal Considerations for more information.

PART III *How can I prevent hazardous situations from occurring?*

7. HANDLING and STORAGE

PRECAUTIONS FOR SAFE HANDLING: All employees who handle this material should be trained to handle it safely. Open containers slowly on a stable surface. As with all chemicals, avoid getting this product ON YOU or IN YOU. Wash thoroughly after handling this product. Do not eat, drink, smoke, or apply cosmetics while handling this product. Avoid breathing airborne dusts generated by this product. Use in a well-ventilated location. Ensure this product is used with adequate ventilation and personal protective equipment (see Section 8, Exposure Controls and Personal Protection). Avoid airborne dusts generated by this product. Clean work areas routinely to prevent accumulation of dust. Clean up spills promptly.

CONDITIONS FOR SAFE STORAGE: Empty containers may contain residual amounts of this product; therefore, empty containers should be handled with care. Store containers in a cool, dry location, away from direct sunlight, sources of intense heat, or where freezing is possible. Store away from incompatible materials (see Section 10, Stability and Reactivity). Have appropriate extinguishing equipment in the storage area (e.g., sprinkler system, portable fire extinguishers). Keep container tightly closed when not in use. Refer to NFPA 654, *Prevention of Fire and Dust Explosions from the Manufacturing, Processing and Handling of Combustible Particulate Solids* for additional information on storage.

SPECIFIC END USE(S): These products are used in chalk line devices in construction. Follow all industry standards for use of this product.

PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT: Follow practices indicated in Section 6 (Accidental Release Measures). Make certain that application equipment is locked and tagged-out safely. Always use this product in areas where adequate ventilation is provided. Decontaminate equipment thoroughly, before maintenance begins. Collect all rinsates and dispose of according to applicable or applicable federal, state, provincial and local standards.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

EXPOSURE LIMITS/CONTROL PARAMETERS:

VENTILATION AND ENGINEERING CONTROLS: Use with adequate ventilation to ensure exposure levels are maintained below the limits provided in this Section if applicable. Ensure eyewash/safety shower stations are available near areas where this product is used.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION (Continued)

EXPOSURE LIMITS/CONTROL PARAMETERS (continued):

WORKPLACE EXPOSURE LIMITS/CONTROL PARAMETERS (continued):

CHEMICAL NAME	CAS #	EXPOSURE LIMITS IN AIR							
		ACGIH-TLVs		OSHA-PELs		NIOSH-RELs		NIOSH	OTHER
		TWA mg/m³	STEL mg/m³	TWA mg/m³	STEL mg/m³	TWA mg/m³	STEL mg/m³	IDLH mg/m³	mg/m³
Calcium Carbonate	1317-65-3	NE	NE	15 (total dust); 5 (resp. fract.)	NE	10 (total dust); 5 (resp. fract.)	NE	NE	NE
Carbon Black	1333-86-4	3 (inhal. fract.)	NE	3.5	NE	3.5 (0.1 in presence of PAHs, as PAHs; 10-hr TWA)	NE	1750	DFG MAK: as Inhalable Dust Carcinogen: IARC-2B, MAK-3B, NIOSH-Ca (in presence of PAHs), TLV-A3
C.I. Pigment Blue 29	57455-37-5	NE	NE	NE	NE	NE	NE	NE	NE
Crystalline Silica	14808-60-7	0.025 (resp. fract.)	NE	30 mg/m³ (total dust) % SO_2 + 2 250 mppcf (resp. dust) % SiO2 + 5 or 10 mg/m³ (resp. dust) % SO_2 + 2		0.05 (resp. dust)	NE	0.05	Carcinogen: IARC-1, MAK-1 (respirable), NIOSH-Ca, NTP-K (respirable), TLV-A2
Iron Oxide/Hematite Exposure Limits given are for iron oxide CAS# 1309-37-1	1317-60-8	3 (resp. fract.)	NE	10 (fume)	NE	5 (dust and fume as Fe)	NE	NE	DFG MAK: With the exception of iron oxides which are not biologically available. Carcinogen: IARC-3, MAK-3B, TLV-A4
Magnesium Carbonate Exposure limits given are for talc, containing no asbestos fibers, CAS # 14807-96-6)	546-93-0	2 (resp. fract.)	NE	20 mppcf (containing < 1% quartz)	NE	2 (resp. dust) & < 1% quartz	NE	NE	Carcinogen: IARC-3, MAK-3B, TLV-A4 (respirable)

NE = Not Established. See Section 16 for Definitions of Terms Used.

INTERNATIONAL OCCUPATIONAL EXPOSURE LIMITS: Currently, the following additional international exposure limits are established for some components of this product.

CALCIUM CARBONATE:
Belgium: TWA = 10 mg/m³, MAR 2002
Hungary: TWA = 10 mg/m³, SEP 2000
Japan: OEL = 2 mg/m³ (resp. dust), 84 mg/m³ (total dust), MAY 2009
Korea: TWA = 10 mg/m³, 2006
Mexico: TWA = 10 mg/m³; STEL 20 mg/m³ (inhalable), 2004
The Netherlands: MAC-TGG = 10 mg/m³, 2003
New Zealand: TWA = 10 mg/m³ (inspirable dust), JAN 2002
Poland: MAC(TWA) dust = 10 mg/m³, JAN 1999
Russia: STEL = 6 mg/m³, JUN 2003
Switzerland: MAK-W = 3 mg/m³, DEC 2006
United Kingdom: TWA = 10 mg/m³ (inhal. dust), OCT 2007
United Kingdom: TWA = 4 mg/m³ (respirable dust), OCT 2007
In Argentina, Bulgaria, Colombia, Jordan, Singapore, Vietnam check ACGIH TLV

CARBON BLACK:
Australia: TWA = 2.5 mg/m³, JUL 2008
Austria: MAK-TMW = 2 mg/m³, resp, 2007
Belgium: TWA = 2 mg/m³, MAR 2002
Denmark: TWA = 0.3 f/cc, carc, MAY 2011
Finland: TWA 0.5 mg/m³, NOV 2011
France: VME = 3.5 mg/m³, FEB 2006
Iceland: TWA = 0.3 f/cc, NOV 2011
Japan: OEL = 0.5 mg/m³ (resp. dust), 2 mg/m³ (total dust), MAY 2009
Korea: TWA = 2 mg/m³, 2006

CARBON BLACK (continued):
Mexico: TWA = 2 mg/m³; STEL = 7 mg/m³, 2004
The Netherlands: MAC-TGG = 1 mg/m³, 2003
New Zealand: TWA = 2 mg/m³ (respirable dust), JAN 2002
Norway: TWA = 3.5 mg/m3, JAN 1999
Peru: TWA = 2 mg/m³, JUL 2005
The Philippines: TWA = 3.5 mg/m³, JAN 1993
Russia: STEL = 4 mg/m³, JUN 2003
Sweden: TWA = 2 mg/cm³ (total dust); TWA = 1 mg/cm³ (resp. dust), JUN 2005
Switzerland: MAK-W = 2 mg/m³, DEC 2006
United Kingdom: TWA = 1 mg/m³ (resp. dust), OCT 2007
In Argentina, Bulgaria, Colombia, Jordan, Singapore, Vietnam check ACGIH TLV

CRYSTALLINE SILICA:
Australia: TWA = 0.1 mg/m³, JUL 2008
Belgium: TWA = 0.1 mg/m³ (resp. dust), MAR 2002
Denmark: TWA = 0.1 mg/m³ (respirable), carc, MAY 2011
Denmark: TWA = 0.1 mg/m³ (resp.), carc, MAY2011
Denmark: TWA = 0.3 mg/m³ (total), MAY 2011
Finland: TWA = 0.05 mg/m³, resp. dust, SEP 2009
France: VME = 0.1 mg/m³, (resp), FEB 2006
Iceland: TWA = 0.1 mg/m³ (resp. dust), NOV 2011
Japan: OEL-C = 0.03 mg/m³ (respirable), APR 2007
Korea: TWA = 0.1 mg/m³, 2006
Mexico: TWA = 0.1 mg/m³ (respirable), 2004
The Netherlands: MAC-TGG = 0.075 mg/m³, 2003
New Zealand: TWA = 0.2 mg/m³ (respirable dust), JAN 2002
Norway: TWA = 0.1 mg/m³ (resp. dust), JAN 1999

CRYSTALLINE SILICA (continued):
Norway: TWA = 0.3 mg/m³ (total dust), JAN 1999
Peru: TWA = 0.05 mg/m³, JUL 2005
Russia: TWA = 1 mg/m³, STEL = 3 mg/m³, JUN 2003
Sweden: TWA = 0.1 mg/m³ (resp. dust), JUN 2005
Switzerland: MAK-W = 0.15 mg/m³, DEC 2006
Thailand: TWA = 10 mg/m³ (resp. dust), JAN 1993
Thailand: TWA = 30 mg/m³ (total dust), JAN 1993
United Kingdom: TWA = 0.1 mg/m³ (resp. dust), OCT 2007
In Argentina, Bulgaria, Colombia, Jordan, Singapore, Vietnam check ACGIH TLV

IRON OXIDE/MAGNETITE:
Russia: STEL = 4 mg/m³, JUN 2003

MAGNESIUM CARBONATE (TALC):
Australia: TWA = 2.5 mg(F)/m³, JUL 2008
Belgium: TWA = 10 mg/m³, MAR 2002
France: VME = 10 mg/m³, FEB 2006
Korea: TWA = 10 mg/m³, 2006
Mexico: TWA = 10 mg/m³; STEL = 20 mg/m³ (inhalable), 2004
The Netherlands: MAC-TGG = 10 mg/m³, 2003
New Zealand: TWA = 10 mg/m³ (inspirable dust), JAN2002
Norway: TWA = 0.6 mg(F)/m³, JAN 1999
Peru: TWA = 10 mg/m³, JUL 2005
Russia: STEL = 10 mg/m³, JUN 2003
Switzerland: MAK-W = 3 mg/m³, DEC 2006
United Kingdom: TWA = 4 mg/m³ (resp. dust), OCT 2007
United Kingdom: TWA = 10 mg/m³ (inhal. dust), OCT 2007
In Argentina, Bulgaria, Colombia, Jordan, Singapore, Vietnam check ACGIH TLV

PROTECTIVE EQUIPMENT: *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, including* U.S. Federal OSHA Respiratory Protection (29 CFR 1910.134), OSHA Eye Protection 29 CFR 1910.133, OSHA Hand Protection 29 CFR 1910.138, OSHA Foot Protection 29 CFR 1910.136 and OSHA Body Protection 29 CFR1910.132), *equivalent standards of Canada (including CSA Respiratory Standard Z94.4-02,* Z94.3-M1982, *Industrial Eye and Face Protectors and* CSA Standard Z195-02, *Protective Footwear), or standards of EU member states (including EN 529:2005 for respiratory PPE, CEN/TR 15419:2006 for hand protection, and CR 13464:1999 for face/eye protection). Please reference applicable regulations and standards for relevant details.*

8. EXPOSURE CONTROLS - PERSONAL PROTECTION (Continued)

PROTECTIVE EQUIPMENT (continued):

RESPIRATORY PROTECTION: Maintain airborne contaminant concentrations below exposure limits listed above. For materials without listed exposure limits, minimize respiratory exposure. If necessary, use only respiratory protection authorized under appropriate regulations. Oxygen levels below 19.5% are considered IDLH by U.S. OSHA. In such atmospheres, use of a full-facepiece pressure/demand SCBA or a full facepiece, supplied air respirator with auxiliary self-contained air supply is required under U.S. OSHA's Respiratory Protection Standard (1910.134-1998). The following are NIOSH Respiratory Protection Equipment Guidelines for some components of these products:

CARBON BLACK

CONCENTRATION	RESPIRATORY PROTECTION
Up to 17.5 mg/m3:	Any Dust and Mist Respirator.
Up to 35 mg/m3:	Any Dust and Mist Respirator except single-use and quarter-mask respirators, or any Supplied-Air Respirator (SAR).
Up to 87.5 mg/m3:	Any SAR operated in a continuous-flow mode, or any Powered, Air-Purifying Respirator (PAPR) with a dust and mist filter.
Up to 175 mg/m3:	Any Air-Purifying, Full-Facepiece Respirator with a high-efficiency particulate filter, or any PAPR with a tight-fitting facepiece and a high-efficiency particulate filter, or any Self-Contained Breathing Apparatus (SCBA) with a full facepiece, or any SAR with a full facepiece.
Up to 1750 mg/m3:	Any SAR operated in a pressure-demand or other positive-pressure mode.
Emergency or Planned	Entry into Unknown Concentrations or IDLH Conditions: Any SCBA that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode, or any SAR that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained breathing apparatus operated in pressure-demand or other positive-pressure mode.
Escape:	Any Air-Purifying, Full-Facepiece Respirator with a high-efficiency particulate filter, or any appropriate escape-type, SCBA.

In Presence of Polycyclicaromatic Hydrocarbons:

Based on NIOSH REL	at Concentrations Above the NIOSH REL, or Where There is No REL, at Any Detectable Concentration: Any SCBA that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode, or any SAR that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary SCBA operated in pressure-demand or other positive-pressure mode.
Escape:	Any Air-Purifying, Full-Facepiece Respirator with a high-efficiency particulate filter, or any appropriate escape-type, SCBA.

CRYSTALLINE SILICA

CONCENTRATION	RESPIRATORY PROTECTION
Up to 0.5 mg/m^3:	Any Air-Purifying Respirator with a high-efficiency particulate filter.
Up to 1.25 mg/m^3:	Any Powered, Air-Purifying Respirator (PAPR) with a high-efficiency particulate filter, or any Supplied-Air Respirator (SAR) operated in a continuous-flow mode.
Up to 2.5 mg/m^3:	Any Air-Purifying, Full-Facepiece Respirator with a high-efficiency particulate filter, or any PAPR with a tight-fitting facepiece and a high-efficiency particulate filter.
Up to 25 mg/m^3:	Any SAR operated in a pressure-demand or other positive-pressure mode.
Emergency or Planned	Entry into Unknown Concentrations or IDLH Conditions: Any SCBA that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode, or any SAR that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary SCBA operated in pressure-demand or other positive-pressure mode.
Escape:	Any Air-Purifying, Full-Facepiece Respirator with a high-efficiency particulate filter, or any appropriate escape-type, SCBA.

EYE PROTECTION: Wear safety goggles/glasses as appropriate for the task if dust or other particulates are present. Face shields are recommended if solutions are made. If necessary, refer to appropriate regulations.

HAND PROTECTION: Wash hands and wrists before putting on and after removing gloves. None needed under normal conditions of use and handling. Wear appropriate glove for work being done. Resistance of specific materials can vary from product to product. Evaluate resistance under conditions of use and maintain gloves carefully. Because all gloves are to some extent permeable and their permeability increases with time, they should be changed regularly or immediately if torn or punctured. Use triple gloves for spill response, as stated in Section 6 (Accidental Release Measures) of this SDS. If necessary refer to appropriate regulations.

SKIN PROTECTION: Use appropriate protective clothing for the task. Full-body chemical protective clothing is recommended for emergency response procedures. 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 appropriate regulations. If necessary, refer to the U.S. OSHA Technical Manual (Section VII: Personal Protective Equipment) or other appropriate regulations.

9. PHYSICAL and CHEMICAL PROPERTIES

FORM: Finely divided, powdered solids
COLOR: Black, red, white or blue.
ODOR: Odorless.
ODOR THRESHOLD: Not applicable.
MOLECULAR FORMULA: Mixture.
MOLECULAR WEIGHT: Mixture.
RELATIVE VAPOR DENSITY (air = 1): Not established.
EVAPORATION RATE (n-BuAc = 1): Not established.
MELTING/FREEZING POINT: Not established.
BOILING POINT: Not established.
VAPOR PRESSURE: Not established.
pH: Not available.
FLAMMABILITY: Dusts may present ignition hazard.
DECOMPOSITION TEMPERATURE: 120°C (248°F)
SPECIFIC GRAVITY (water = 1): Black Chalk: 2.49-2.52; Blue Chalk: 2.60-2.62; Red Chalk: 3.1-3.3; White Chalk: 2.71
SOLUBILITY IN ORGANIC SOLVENTS: Not known.
SOLUBILITY IN WATER: Black and Blue Chalks: Insoluble. Red Chalk: 0.1%; White Chalk: Insoluble.
HOW TO DETECT THIS SUBSTANCE IN EVENT OF ACCIDENTAL SPILL (warning properties): The color of these products may be a method to identify them in event of an accidental spill.

10. STABILITY and REACTIVITY

CHEMICAL STABILITY: Normally stable.
DECOMPOSITION PRODUCTS: *Combustion:* Thermal decomposition of this product can produce iron oxides, aluminum oxides, silicon dioxide, sulfur dioxide, magnesium, carbon and calcium oxides. The Blue Chalk may release hydrogen sulfide in contact with acids. *Hydrolysis:* None known.

10. STABILITY and REACTIVITY (Continued)

MATERIALS WITH WHICH PRODUCT IS INCOMPATIBLE: Calcium carbonate ignites on contact with fluorine. It is incompatible with acids, aluminum, and ammonium salts and mercury/hydrogen mixtures. Due to other components, these products may also be incompatible with formaldehyde, strong oxidizing agents, hydrofluoric acid, manganese trifluoride, sodium, and xenon hexafluoride.

POSSIBILITY OF HAZARDOUS REACTIONS/POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: Avoid exposure to or contact with light, extreme temperatures, and incompatible chemicals.

PART IV *Is there any other useful information about this material?*

11. TOXICOLOGICAL INFORMATION

SYMPTOMS OF EXPOSURE BY ROUTE OF EXPOSURE: The most significant routes of industrial exposure to this product are by skin or eye contact and inhalation.

INHALATION: If dusts or particulates from these products are inhaled, irritation of the nose, throat, and lungs can occur. Symptoms may include sneezing, coughing, nasal congestion, and difficulty breathing. Symptoms are generally alleviated upon exposure to fresh air. If heated, chronic exposure to concentrations of silicon dioxide fume may cause chronic obstructive lung disease. Inhalation of iron oxide fume or dust is cause of pulmonary roentgenographic appearance called siderosis, or an accumulation of iron that leads to reduced lung capacity. These products contain Crystalline Silica, which is a known human carcinogen. Chronic inhalation exposure to this material may cause silicosis, pulmonary fibrosis, bronchitis or present a hazard of cancer, due to the presence of Crystalline Silica.

CONTACT WITH SKIN or EYES: Skin contact may cause abrasion, redness, and discomfort. Prolonged or repeated skin exposure may cause dermatitis (dry, red skin). Direct eye contact with these products may cause stinging, tearing, and redness. Dust can cause mechanical irritation to the eye. Repeated contact of iron dusts with the eyes can cause conjunctivitis, or can cause discoloration of the eyes.

SKIN ABSORPTION: This product does not pose a hazard of skin absorption.

INGESTION: Ingestion is an unlikely route of occupational exposure to this product. In the unlikely event that dusts from the product are ingested nausea, vomiting, and diarrhea may result.

Repeated ingestion of iron compounds can cause vomiting, diarrhea, pink urine, black stool, and liver or kidney damage. Repeated ingestion of iron compounds can also cause siderosis, which is an accumulation of iron in tissues.

INJECTION: These products do not pose a hazard of injection.

HAZARDOUS MATERIAL IDENTIFICATION SYSTEM

HEALTH HAZARD	(BLUE)	2*
FLAMMABILITY HAZARD	(RED)	1
PHYSICAL HAZARD	(YELLOW)	0

PROTECTIVE EQUIPMENT

EYES	RESPIRATORY	HANDS	BODY
	SEE SECTION 8		SEE SECTION 8

For Routine Industrial Use and Handling Applications

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate
3 = Serious 4 = Severe * = Chronic hazard

HEALTH EFFECTS OR RISKS FROM EXPOSURE: An Explanation in Lay Terms. In the event of exposure, the following symptoms may be observed:

Acute: Acute exposure to the skin and eyes can cause mechanical irritation. Inhalation of dusts can cause pulmonary irritation.

Chronic: Repeated inhalation exposure may cause adverse effects to the respiratory system. Chronic inhalation may result in pulmonary fibrosis. This product contains crystalline silica, which is a known human carcinogen.

HEALTH EFFECTS OR RISKS FROM EXPOSURE (continued):

TARGET ORGANS: Acute: Skin, eyes, respiratory system. Chronic: Skin, respiratory system.

TOXICITY DATA: Currently, toxicity data are available for the following components of these products:

LIMESTONE/CALCIUM CARBONATE:

TCLo (Inhalation-Rat) 84 mg/m^3/4 hohrs/40 weeks-intermittent: Lungs, Thorax, or Respiration: fibrosis (interstitial); Liver: other changes Kidney/Ureter/Bladder: other changes

TCLo (Inhalation-Rat) 250 mg/m^3/2 hours/24 weeks-intermittent: Lungs, Thorax, or Respiration: fibrosis, focal (pneumoconiosis)

CARBON BLACK:

LD_{50} (Oral-Rat) > 15,400 mg/kg: Behavioral: somnolence (general depressed activity)

LD_{50} (Skin-Rabbit) > 3 gm/kg

TDLo (Intravenous-Rat) 10 mg/kg/2 minutes: Liver: changes in liver weight; Blood: changes in spleen

TDLo (Intravenous-Rat) 10 mg/kg/2 minutes: Biochemical; Enzyme inhibition, induction, or change in blood or tissue levels: hepatic microsomal mixed oxidase (dealkylation, hydroxylation, etc.)

TDLo (Skin-Rat) 11 gm/kg/4 weeks-intermittent: Blood: pigmented or nucleated red blood cells; Liver: changes in liver weight; Nutritional and Gross Metabolic: weight loss or decreased weight gain

TDLo (Intratracheal-Rat) 16 mg/kg: Lungs, Thorax, or Respiration: other changes; Biochemical: Metabolism (Intermediary): effect on inflammation or mediation of inflammation

CARBON BLACK (continued):

TDLo (Intratracheal-Rat) 15 mg/kg: Lungs, Thorax, or Respiration: other changes; Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: cytochrome oxidases (including oxidative phosphorylation)

TDLo (Intratracheal-Rat) 10 mg/kg: Lungs, Thorax, or Respiration: sputum; Biochemical: Metabolism (Intermediary): other proteins, effect on inflammation or mediation of inflammation

TDLo (Intratracheal-Mouse) 20 mg/kg: Lungs, Thorax, or Respiration: other changes; Biochemical: Metabolism (Intermediary): effect on inflammation or mediation of inflammation

TDLo (Intratracheal-Mouse) 20 mg/kg/4 days-intermittent: Lungs, Thorax, or Respiration: sputum; Immunological Including Allergic: Increase in cellular immune response; Biochemical: Metabolism (Intermediary): effect on inflammation or mediation of inflammation

TDLo (Parenteral-Mouse) 36 µg/kg/3 days-intermittent: Immunological Including Allergic: Increase in humoral immune response

TCLo (Inhalation-Rat) 7 mg/m^3: Lungs, Thorax, or Respiration: other changes; Biochemical: Metabolism (Intermediary): effect on inflammation or mediation of inflammation

CARBON BLACK (continued):

TCLo (Inhalation-Rat) 1.66 mg/m^3/7 hours: Lungs, Thorax, or Respiration: sputum; Blood: changes in leukocyte (WBC) count; Biochemical: Metabolism (Intermediary): effect on inflammation or mediation of inflammation

TCLo (Inhalation-Rat) 50 mg/m^3: Sense Organs and Special Senses (Olfaction): effect, not otherwise specified; Biochemical: Metabolism (Intermediary): effect on inflammation or mediation of inflammation

TCLo (Inhalation-Rat) 50 mg/m^3/6 hours/90 days-intermittent: Lungs, Thorax, or Respiration: other changes

TCLo (Inhalation-Rat) 1 mg/m^3/13 weeks-intermittent: Lungs, Thorax, or Respiration: other changes; Biochemical: Metabolism (Intermediary): effect on inflammation or mediation of inflammation

TCLo (Inhalation-Rat) 1 mg/m^3/13 weeks-intermittent: Lungs, Thorax, or Respiration: other changes, changes in lung weight; Biochemical: Metabolism (Intermediary): effect on inflammation or mediation of inflammation

TCLo (Inhalation-Rat) 50 mg/m^3/13 weeks-intermittent: Lungs, Thorax, or Respiration: other changes; Biochemical: Metabolism (Intermediary): other

11. TOXICOLOGICAL INFORMATION (Continued)

TOXICITY DATA (continued):

CARBON BLACK (continued):
TCLo (Inhalation-Rat) 50 mg/m^3/13 weeks-intermittent: Lungs, Thorax, or Respiration: other changes; Biochemical: Metabolism (Intermediary): other, effect on inflammation or mediation of inflammation
TCLo (Inhalation-Rat) 7 mg/m3/6 hours/13 weeks-intermittent: Sense Organs and Special Senses (Olfaction): effect, not otherwise specified; Biochemical: Metabolism (Intermediary): effect on inflammation or mediation of inflammation
TCLo (Inhalation-Mouse) 50 mg/m^3/6 hours: Sense Organs and Special Senses (Olfaction): effect, not otherwise specified
TCLo (Inhalation-Mouse) 1 mg/m^3/13 weeks-intermittent: Lungs, Thorax, or Respiration: other changes; Biochemical: Metabolism (Intermediary): effect on inflammation or mediation of inflammation
TCLo (Inhalation-Mouse) 1 mg/m^3/13 weeks-intermittent: Lungs, Thorax, or Respiration: other changes; Lungs, Thorax, or Respiration: changes in lung weight; Biochemical: Metabolism (Intermediary): effect on inflammation or mediation of inflammation
TCLo (Inhalation-Mouse) 7 mg/m^3/6 hours/13 weeks-intermittent: Sense Organs and Special Senses (Olfaction): effect, not otherwise specified; Biochemical: Metabolism (Intermediary): effect on inflammation or mediation of inflammation
TCLo (Inhalation-Hamster) 7 mg/m^3/13 weeks-intermittent: Lungs, Thorax, or Respiration: other changes; Biochemical: Metabolism (Intermediary): effect on inflammation or mediation of inflammation
TCLo (Inhalation-Hamster) 50 mg/m^3/6 hours/13 weeks-intermittent: Sense Organs and Special Senses (Olfaction): effect, not otherwise specified
C.I. PIGMENT BLUE 29:
LD_{50} (Oral-Rat) 10 gm/kg
LD_{50} (Oral-Mouse) 10 gm/kg
TDLo (Oral-Rat) 450 mg/kg/90 days-continuous: Gastrointestinal: other changes; Kidney/Ureter/Bladder: other changes
CRYSTALLINE SILICA, CRYSTALLINE-QUARTZ:
LCLo (Inhalation-Human) 300 mg/m^3/10 years-intermittent: Systemic effects
TCLo (Inhalation-Human) 16 mppcf/8 hours/17.9 years-intermittent: Pulmonary system effects
TCLo (Inhalation-Rat) 58 mg/m^3/13 weeks-intermittent: Lungs, Thorax, or Respiration: other changes; Endocrine: changes in thymus weight; Blood: changes in leukocyte (WBC) count

CRYSTALLINE SILICA, CRYSTALLINE-QUARTZ (continued):
TCLo (Inhalation-Rat) 50 mg/m^3/6 hours/71 weeks-intermittent: Carcinogenic effects
TCLo (Inhalation-Rat) 80 mg/m^3/26 weeks-intermittent: Lungs, Thorax, or Respiration: fibrosis, focal (pneumoconiosis); Blood: changes in spleen; Immunological Including Allergic: decrease in cellular immune
TCLo (Inhalation-Rat) 108 mg/m^3/6 hours/3 days-intermittent: Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: phosphatases, Enzyme inhibition, induction, or change in blood or tissue levels: other oxidoreductases, Metabolism (Intermediary): other proteins
TCLo (Inhalation-Mouse) 1475 µg/m^3/8 hours/21 weeks-intermittent: Lungs, Thorax, or Respiration: other changes
TCLo (Inhalation-Mouse) 4932 µg/m^3/24 hours/39 weeks-continuous: Endocrine: changes in spleen weight; Immunological Including Allergic: decrease in humoral immune response
TCLo (Inhalation-Guinea Pig) 28 mg/m^3/3 weeks-continuous: Lungs, Thorax, or Respiration: other changes, changes in lung weight; Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: other
TDLo (Intraperitoneal-Rat) 45 mg/kg: Carcinogenic effects
TDLo (Intratracheal-Rat) 90 mg/kg: Equivocal tumorigenic agent
TDLo (Intratracheal-Rat) 90 mg/kg: AR
TDLo (Intratracheal-Rat) 111 mg/kg: Carcinogenic effects
TDLo (Intratracheal-Rat) 111 mg/kg: AR
TDLo (Intratracheal-Rat) 100 mg/kg/19 weeks-intermittent: Tumorigenic: equivocal tumorigenic agent by RTECS criteria; Lungs, Thorax, or Respiration: tumors
TDLo (Intrapleural-Rat) 90 mg/kg: Carcinogenic effects
TDLo (Intrapleural-Hamster) 83 mg/kg: Tumorigenic: neoplastic by RTECS criteria, tumors at site of application
TDLo (Implant-Rat) 900 mg/kg: Neoplastic effects
TDLo (Implant-Mouse) 4000 mg/kg: Tumorigenic: equivocal tumorigenic agent by RTECS criteria; Kidney, Ureter, Bladder: tumors
TDLo (Implant-Mouse) 4000 mg/kg: Equivocal tumorigenic agent
TDLo (Intravenous-Rat) 90 mg/kg: Tumorigenic: equivocal tumorigenic agent by RTECS criteria; Blood: lymphoma, including Hodgkin's disease

CRYSTALLINE SILICA, CRYSTALLINE-QUARTZ (continued):
TD (Intraperitoneal-Rat) 90 mg/kg/4 weeks-intermittent: Equivocal tumorigenic agent
TD (Intraperitoneal-Rat) 450 mg/kg/4 weeks-intermittent: Neoplastic effects
TD (Implant-Rat) 4554 mg/kg: Equivocal tumorigenic agent
TD (Intrapleural-Rat) 200 mg/kg: Equivocal tumorigenic agent
TD (Intrapleural-Rat) 100 mg/kg: Carcinogenic effects
TD (Intrapleural-Rat) 100 mg/kg: Neoplastic effects
TD (Intrapleural-Rat) 100 mg/kg: Tumorigenic: equivocal tumorigenic agent by RTECS criteria; Lungs, Thorax, or Respiration: fibrosis, focal (pneumoconiosis), tumors
LDLo (Intravenous-Rat) 90 mg/kg
LDLo (Intratracheal-Rat) 200 mg/kg
LDLo (Intravenous-Mouse) 40 mg/kg
LDLo (Intravenous-Dog, adult) 20 mg/kg
Micronucleus test (Human-Lung) 40 µg/cm^2
Micronucleus test (Hamster-Lung) 160 µg/cm^2
HEMATITE/IRON OXIDE:
TDLo (Intratracheal-Rat) 12 mg/kg: Lungs, Thorax, or Respiration: other changes; Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: multiple enzyme effects
TCLo (Inhalation-Rat) 3900 mg/m^3/6 hours/68 weeks-intermittent: Lungs, Thorax, or Respiration: fibrosis (interstitial)
TCLo (Inhalation-Dog) 3900 mg/m^3/6 hours/68 weeks-intermittent: Lungs, Thorax, or Respiration: fibrosis (interstitial)
MAGNESIUM CARBONATE/TALC:
LD_{50} (Oral-Rat) 7000 mg/kg
LD_{50} (Oral-Mouse) 8000 mg/kg
LD_{50} (Intraperitoneal-Mouse) 1033 mg/kg
TCLo (Inhalation-Rat) 76 mg/m^3/4 hours: Cardiac: pulse rate increase, without fall in BP; Liver: liver function tests impaired; Kidney/Ureter/Bladder: other changes in urine composition
TCLo (Inhalation-Rat) 76 mg/m^3/4 hours: Blood: changes in serum composition (e.g. TP, bilirubin, cholesterol); Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: phosphatases
TDLo (Unreported-Mammal-Species Unspecified) 18,000 mg/kg/7 days-intermittent: Gastrointestinal: other changes; Related to Chronic Data: death

CARCINOGENIC POTENTIAL OF COMPONENTS: The components of these products are listed by agencies tracking the carcinogenic potential of chemical compounds, as follows:

CARBON BLACK: ACGIH TLV-A3 (Confirmed Animal Carcinogen with Unknown Relevance to Humans); IARC-2B (Possibly Carcinogenic to Humans), MAK-3B (Substances for Which *in vitro* Tests or Animal Studies Have Yielded Evidence of Carcinogenic Effects that is Not Sufficient for Classification of the Substance in One of the Other Categories); In the Presence of PAHS: NIOSH-Ca (Potential Occupational Carcinogen, with No Further Categorization)

CRYSTALLINE SILICA: ACGIH TLV-A2 (Suspected Human Carcinogen); IARC-1 (Carcinogenic to Humans); Respirable: MAK-1 (Substances that Cause Cancer in Man and Can Be Assumed to Make a Significant Contribution to Cancer Risk); NIOSH-Ca (Potential Occupational Carcinogen, with No Further Categorization); Respirable: NTP-K (Known to Be a Human Carcinogen)

IRON OXIDE/HEMATITE: ACGIH TLV-A4 (Not Classifiable as a Human Carcinogen); IARC-3 (Unclassifiable as to Carcinogenicity in Humans); MAK-3B (Substances for Which *in vitro* Tests or Animal Studies Have Yielded Evidence of Carcinogenic Effects that is Not Sufficient for Classification of the Substance in One of the Other Categories)

MAGNESIUM CARBONATE (TALC containing no asbestos fibers): ACGIH TLV-A4 (Not Classifiable as a Human Carcinogen); IARC-3 (Unclassifiable as to Carcinogenicity in Humans); Respirable: MAK-3B (Substances for Which *in vitro* Tests or Animal Studies Have Yielded Evidence of Carcinogenic Effects that is Not Sufficient for Classification of the Substance in One of the Other Categories)

The remaining components of this product are not found on the following lists: U.S. EPA, U.S. NTP, U.S. OSHA, U.S. NIOSH, GERMAN MAK, IARC, or ACGIH and therefore are neither considered to be nor suspected to be cancer-causing agents by these agencies.

IRRITANCY OF PRODUCT: These products may cause skin, eye and respiratory irritation.

SENSITIZATION TO THE PRODUCT: Components of these products are not known to cause human skin or respiratory sensitization.

REPRODUCTIVE TOXICITY INFORMATION: The components of these products are not known to cause human mutagenic, embryotoxic, teratogenic or reproductive toxicity in humans.

ACGIH BIOLOGICAL EXPOSURE INDICES: Currently, there are no ACGIH Biological Exposure Indices (BEIs) determined for the components of these products.

12. ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

MOBILITY: These products have not been tested for mobility in soil; due to form they are not expected to be mobile.

PERSISTENCE AND BIODEGRADABILITY: These products have not been tested for persistence or biodegradability.

BIO-ACCUMULATION POTENTIAL: These products have not been tested for bio-accumulation potential.

ECOTOXICITY: These products have not been tested for aquatic or animal toxicity. All release to terrestrial, atmospheric and aquatic environments should be avoided.

12. ECOLOGICAL INFORMATION (Continued)

OTHER ADVERSE EFFECTS: The components of these products are not listed as having ozone depletion potential.
EFFECT OF CHEMICAL ON AQUATIC LIFE: These products have not been tested for aquatic toxicity. Releases of large quantities of this material may be detrimental to an aquatic environment.

13. DISPOSAL CONSIDERATIONS

PREPARING WASTES FOR DISPOSAL: Waste disposal must be in accordance with appropriate U.S. Federal, State, and local regulations or with regulations of Canada. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority.
U.S. EPA WASTE NUMBER: Not applicable.
EUROPEAN EWC CODE: Wastes Not Otherwise Specified: 16 10 99

14. TRANSPORTATION INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION REGULATIONS: These products are NOT classified as dangerous goods, per U.S. DOT regulations, under 49 CFR 172.101.
TRANSPORT CANADA TRANSPORTATION OF DANGEROUS GOODS REGULATIONS: These products are NOT classified as Dangerous Goods, per regulations of Transport Canada.
INTERNATIONAL AIR TRANSPORT ASSOCIATION (IATA): These products are NOT classified as Dangerous Goods, per rules of IATA.
INTERNATIONAL MARITIME ORGANIZATION (IMO) DESIGNATION: These products are NOT classified as Dangerous Goods, per rules of IMO.
EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY ROAD (ADR): These products are NOT classified by the United Nations Economic Commission for Europe to be dangerous goods.
TRANSPORT IN BULK ACCORDING TO THE IBC CODE: Not applicable.
ENVIRONMENTAL HAZARDS: These products do not meet the criteria of environmentally hazardous according to the criteria of the UN Model Regulations (as reflected in the IMDG Code, ADR, RID, and ADN); components are not specifically listed in Annex III under MARPOL 73/78.

15. REGULATORY INFORMATION

ADDITIONAL U.S. REGULATIONS:

U.S. SARA REPORTING REQUIREMENTS: The components of these products 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 THRESHOLD PLANNING QUANTITY: There are no specific Threshold Planning Quantities for the components of these products. The default Federal SDS submission and inventory requirement filing threshold of 10,000 lb (4,540 kg) therefore applies, per 40 CFR 370.20.
U.S. CERCLA REPORTABLE QUANTITY (RQ): Not applicable.
U.S. TSCA INVENTORY STATUS: Components of these products are on the TSCA Inventory.
OTHER U.S. FEDERAL REGULATIONS: Not applicable.
CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65): Crystalline Silica is on the California Proposition 65 lists. Carbon Black, with particles of respirable size, is on the Proposition 65 Lists as well. WARNING! These products contain compounds known to the State of California to cause cancer.

ADDITIONAL CANADIAN REGULATIONS:

CANADIAN DSL/NDSL INVENTORY STATUS: The components of these products are on the DSL Inventory.
OTHER CANADIAN REGULATIONS: Not applicable.
CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA) PRIORITIES SUBSTANCES LISTS: The components of these products are not on the CEPA Priority Substances Lists.
CANADIAN WHMIS CLASSIFICATION and SYMBOLS: Class D2A-Chronic Toxic Effects

ADDITIONAL EUROPEAN REGULATIONS:

SAFETY, HEALTH, AND ENVIRONMENTAL REGULATIONS/LEGISLATION SPECIFIC FOR THE PRODUCT: None applicable.
CHEMICAL SAFETY ASSESSMENT: No Data Available. The chemical safety assessment is required for some substances according to European Union Regulation (EC) 1907/2006, Article 14.

16. OTHER INFORMATION

ANSI LABELING (Z129.1, Provided to Summarize Occupational Hazard Information): **CAUTION!** MAY CAUSE EYE AND RESPIRATORY TRACT IRRITATION. CONTAINS CRYSTALLINE SILICA, WHICH IS A KNOWN HUMAN CARCINOGEN; CONTAINS CARBON BLACK, WHICH IS A KNOWN ANIMAL CARCINOGEN. INGESTION MAY BE HARMFUL. Avoid breathing dusts. Avoid contact with skin, eyes, and clothing. Keep container closed. Use with adequate ventilation. Prevent dust accumulation. Wash thoroughly after handling. Wear gloves, goggles, dust mask, and appropriate body protection during operations that can generate dust.

16. OTHER INFORMATION (Continued)

ANSI LABELING (continued)): FIRST-AID: In case of contact, flush skin or eyes with plenty of water. If inhaled, remove to fresh air. If ingested do not induce vomiting. Get medical attention if adverse effects continue after exposure ends. IN CASE OF FIRE: Use water fog, dry chemical, CO_2, or "alcohol" foam. IN CASE OF SPILL: Sweep up spill, avoiding the generation of airborne dusts. Place residual in appropriate container and seal. Consult Safety Data Sheet for additional information.

GLOBAL HARMONIZATION LABELING AND CLASSIFICATION: Classified in accordance with CLP Regulation (EC) 1272/2008.

Classification: Carcinogenic Cat. 2
Signal Word: Warning
Hazard Statements: H351: Suspected of causing cancer. For Blue Chalk Only: EUH032: Contact with acids liberates very toxic gas (hydrogen sulfide).
Precautionary Statements:
Prevention: P201: Obtain special instructions before use. P202: Do not handle until all safety precautions have been read and understood. P280: Wear protective gloves/protective clothing/eye protection/face protection.
Response: P308 + P313: IF exposed or concerned: Get medical advice/attention.
Storage: P405: Store locked up.
Disposal: P501: Dispose of contents/containers in accordance with all local, regional, national and international regulations.
Hazard Symbol/Pictograms: GHS08

EU 67/548/EEC LABELING AND CLASSIFICATION: Classified in accordance with the European Community Council Directive 67/548/EEC or subsequent Directives.

Classification: Carcinogenic Cat. 3
Risk Phrases: R45: May cause cancer. For Blue Chalk Only: R32: Contact with acids liberates very toxic gas (hydrogen sulfide).
Safety Phrases: S(1/2): Keep locked up and out of the reach of children. (Can be omitted when product is for industrial use only). S22: Do not breathe dust. S25: Avoid contact with eyes. S36/37/39: Wear suitable protective clothing, gloves and eye/face protection. S38: In case of insufficient ventilation wear suitable respiratory equipment. S45: In case of accident or if you feel unwell seek medical advice immediately (show the label where possible). S53: Avoid exposure - obtain special instructions before use.
Hazard Symbol: Xn

CLASSIFICATION FOR COMPONENTS:

Full Text Global Harmonization AND EU CLP Regulation (EC) 1272/2008:

Crystalline Silica: This is a self-classification.
Classification: Carcinogenic Category 2
Hazard Statement Codes: H351: Suspected of causing cancer.
C.I. Pigment Blue 29: This is a self-classification.
Classification: None.
Hazard Statement Codes: EUH032: Contact with acids liberates very toxic gas (hydrogen sulfide).
All Other Components: No classification has been published or is applicable.

Full Text EU 67/548/EEC:

Crystalline Silica: This is a self-classification.
Classification: Carcinogenic Category 3
Risk Phrases: R45: May cause cancer.
Crystalline Silica: This is a self-classification.
Classification: None.
Risk Phrases: R32: Contact with acids liberates very toxic gas (hydrogen sulfide).
All Other Components: No classification has been published or is applicable.

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DATE OF PRINTING:	July 30, 2013
REVISION INFORMATION:	July 2010: Review of SDS and up-date. Format up-dated. Section 3 EU Crystalline Silica self-classification added. Section 8 Exposure limits up-dated. Section 11 Cancer ratings up-dated. Section 15 EU component classification added. July 2013: Review and revise entire SDS to add GHS compliance. Up-date Section 8 Exposure Limits. Section 11 Cancer ratings up-dated.

DEFINITIONS OF TERMS

A large number of abbreviations and acronyms appear on an SDS. Some of these, which are commonly used, include the following:

CAS #: This is the Chemical Abstract Service Number that uniquely identifies each constituent.

EXPOSURE LIMITS IN AIR:

CEILING LEVEL: The concentration that shall not be exceeded during any part of the working exposure.

DFG MAK Germ Cell Mutagen Categories: 1: Germ cell mutagens which have been shown to increase the mutant frequency in the progeny of exposed humans. **2:** Germ cell mutagens which have been shown to increase the mutant frequency in the progeny of exposed mammals. **3A:** Substances which have been shown to induce genetic damage in germ cells of human of animals, or which produce mutagenic effects in somatic cells of mammals *in vivo* and have been shown to reach the germ cells in an active form.

EXPOSURE LIMITS IN AIR (continued):

DFG MAK Germ Cell Mutagen Categories (continued): 3B: Substances which are suspected of being germ cell mutagens because of their genotoxic effects in mammalian somatic cell *in vivo*; in exceptional cases, substances for which there are no *in vivo* data, but which are clearly mutagenic *in vitro* and structurally related to known in vivo mutagens. **4:** Not applicable (Category 4 carcinogenic substances are those with non-genotoxic mechanisms of action. By definition, germ cell mutagens are genotoxic. Therefore, a Category 4 for germ cell mutagens cannot apply. At some time in the future, it is conceivable that a Category 4 could be established for genotoxic substances with primary targets other than DNA [e.g. purely aneugenic substances] if research results make this seem sensible.) **5:** Germ cell mutagens, the potency of which is considered to be so low that, provided the MAK value is observed, their contribution to genetic risk for humans is expected not to be significant.

DEFINITIONS OF TERMS (Continued)

EXPOSURE LIMITS IN AIR (continued):

DFG MAK Pregnancy Risk Group Classification: Group A: A risk of damage to the developing embryo or fetus has been unequivocally demonstrated. Exposure of pregnant women can lead to damage of the developing organism, even when MAK and BAT (Biological Tolerance Value for Working Materials) values are observed.

DFG MAK Pregnancy Risk Group Classification (continued): Group B: Currently available information indicates a risk of damage to the developing embryo or fetus must be considered to be probable. Damage to the developing organism cannot be excluded when pregnant women are exposed, even when MAK and BAT values are observed. **Group C:** There is no reason to fear a risk of damage to the developing embryo or fetus when MAK and BAT values are observed. **Group D:** Classification in one of the groups A-C is not yet possible because, although the data available may indicate a trend, they are not sufficient for final evaluation.

IDLH-Immediately Dangerous to Life and Health: This level represents a concentration from which one can escape within 30-minutes without suffering escape-preventing or permanent injury.

LOQ: Limit of Quantitation.

MAK: Federal Republic of Germany Maximum Concentration Values in the workplace.

NE: Not Established. When no exposure guidelines are established, an entry of NE is made for reference.

NIC: Notice of Intended Change.

NIOSH CEILING: The exposure that shall not be exceeded during any part of the workday. If instantaneous monitoring is not feasible, the ceiling shall be assumed as a 15-minute TWA exposure (unless otherwise specified) that shall not be exceeded at any time during a workday.

NIOSH RELs: NIOSH's Recommended Exposure Limits.

PEL-Permissible Exposure Limit: OSHA's Permissible Exposure Limits. This exposure value means exactly the same as a TLV, except that it is enforceable by OSHA. The OSHA Permissible Exposure Limits are based in the 1989 PELs and the June, 1993 Air Contaminants Rule (Federal Register: 58: 35338-35351 and 58: 40191). Both the current PELs and the vacated PELs are indicated. The phrase, "Vacated 1989 PEL," is placed next to the PEL that was vacated by Court Order.

SKIN: Used when a there is a danger of cutaneous absorption.

STEL-Short Term Exposure Limit: Short Term Exposure Limit, usually a 15-minute time-weighted average (TWA) exposure that should not be exceeded at any time during a workday, even if the 8-hr TWA is within the TLV-TWA, PEL-TWA or REL-TWA.

TLV-Threshold Limit Value: An airborne concentration of a substance that represents conditions under which it is generally believed that nearly all workers may be repeatedly exposed without adverse effect. The duration must be considered, including the 8-hour.

TWA-Time Weighted Average: Time Weighted Average exposure concentration for a conventional 8-hr (TLV, PEL) or up to a 10-hr (REL) workday and a 40-hr workweek.

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS: This rating system was developed by the National Paint and Coating Association and has been adopted by industry to identify the degree of chemical hazards.

HEALTH HAZARD: **0** (Minimal Hazard: No significant health risk, irritation of skin or eyes not anticipated. *Skin Irritation*: Essentially non-irritating. PII or Draize = "0". *Eye Irritation*: Essentially non-irritating, or minimal effects which clear in < 24 hours [e.g. mechanical irritation]. Draize = "0". *Oral Toxicity LD_{50} Rat*: < 5000 mg/kg. *Dermal Toxicity LD_{50}Rat or Rabbit*: < 2000 mg/kg. *Inhalation Toxicity 4-hrs LC_{50} Rat*: < 20 mg/L.); **1** (Slight Hazard: Minor reversible injury may occur; slightly or mildly irritating. *Skin Irritation*: Slightly or mildly irritating. *Eye Irritation*: Slightly or mildly irritating. *Oral Toxicity LD_{50} Rat*: > 500-5000 mg/kg. *Dermal Toxicity LD_{50}Rat or Rabbit*: > 1000-2000 mg/kg. *Inhalation Toxicity LC_{50}* 4-hrs *Rat*: > 2-20 mg/L.);**2** (Moderate Hazard: Temporary or transitory injury may occur. *Skin Irritation*: Moderately irritating; primary irritant; sensitizer. PII or Draize > 0, < 5. *Eye Irritation*: Moderately to severely irritating and/or corrosive; reversible corneal opacity; corneal involvement or irritation clearing in 8-21 days. Draize > 0, ≤ 25. *Oral Toxicity LD_{50} Rat*: > 50-500 mg/kg. *Dermal Toxicity LD_{50}Rat or Rabbit*: > 200-1000 mg/kg. *Inhalation Toxicity LC_{50} 4-hrs Rat*: > 0.5-2 mg/L.); **3** (Serious Hazard: Major injury likely unless prompt action is taken and medical treatment is given; high level of toxicity; corrosive. *Skin Irritation*: Severely irritating and/or corrosive; may destroy dermal tissue, cause skin burns, dermal necrosis. PII or Draize > 5-8 with destruction of tissue. *Eye Irritation*: Corrosive, irreversible destruction of ocular tissue; corneal involvement or irritation persisting for more than 21 days. Draize > 80 with effects irreversible in 21 days. *Oral Toxicity LD_{50} Rat*: > 1-50 mg/kg. *Dermal Toxicity LD_{50}Rat or Rabbit*: > 20-200 mg/kg. *Inhalation Toxicity LC_{50} 4-hrs Rat*: > 0.05-0.5 mg/L.); **4** (Severe Hazard: Life-threatening; major or permanent damage may result from single or repeated exposure. *Skin Irritation*: Not appropriate. Do not rate as a "4", based on skin irritation alone. *Eye Irritation*: Not appropriate. Do not rate as a "4", based on eye irritation alone. *Oral Toxicity LD_{50} Rat*: ≤ 1 mg/kg. *Dermal Toxicity LD_{50}Rat or Rabbit*: ≤ 20 mg/kg. *Inhalation Toxicity LC_{50} 4-hrs Rat*: ≤ 0.05 mg/L).

FLAMMABILITY HAZARD: **0** (Minimal Hazard-Materials that will not burn in air when exposure to a temperature of 815.5°C [1500°F] for a period of 5 minutes.); **1** (Slight Hazard-Materials that must be pre-heated before ignition can occur. Material require considerable pre-heating, under all ambient temperature conditions before ignition and combustion can occur, including: Materials that will burn in air when exposed to a temperature of 815.5°C (1500°F) for a period of 5 minutes or less; Liquids, solids and semisolids having a flash point at or above 93.3°C [200°F] (e.g. OSHA Class IIIB, or; Most ordinary combustible materials [e.g. wood, paper, etc.]; **2** (Moderate Hazard-Materials that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur. Materials in this degree would not, under normal conditions, form hazardous atmospheres in air, but under high ambient temperatures or moderate heating may release vapor in sufficient quantities to produce hazardous atmospheres in air, including: Liquids having a flash-point at or above 37.8°C [100°F]; Solid materials in the form of course dusts that may burn rapidly but that generally do not form explosive atmospheres; Solid materials in a fibrous or shredded form that may burn rapidly and create flash fire hazards (e.g. cotton, sisal, hemp; Solids and semisolids that readily give off flammable vapors.);

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS (continued):

FLAMMABILITY HAZARD (continued): **3** (Serious Hazard- Liquids and solids that can be ignited under almost all ambient temperature conditions. Materials in this degree produce hazardous atmospheres with air under almost all ambient temperatures, or, unaffected by ambient temperature, are readily ignited under almost all conditions, including: Liquids having a flash point below 22.8°C [73°F] and having a boiling point at or above 38°C [100°F] and below 37.8°C [100°F] [e.g. OSHA Class IB and IC]; Materials that on account of their physical form or environmental conditions can form explosive mixtures with air and are readily dispersed in air [e.g., dusts of combustible solids, mists or droplets of flammable liquids]; Materials that burn extremely rapidly, usually by reason of self-contained oxygen [e.g. dry nitrocellulose and many organic peroxides]); **4** (Severe Hazard-Materials that will rapidly or completely vaporize at atmospheric pressure and normal ambient temperature or that are readily dispersed in air, and which will burn readily, including: Flammable gases; Flammable cryogenic materials; Any liquid or gaseous material that is liquid while under pressure and has a flash point below 22.8°C [73°F] and a boiling point below 37.8°C [100°F] [e.g. OSHA Class IA; Material that ignite spontaneously when exposed to air at a temperature of 54.4°C [130°F] or below [e.g. pyrophoric]).

PHYSICAL HAZARD: **0** (*Water Reactivity*: Materials that do not react with water. *Organic Peroxides*: Materials that are normally stable, even under fire conditions and will not react with water. *Explosives*: Substances that are Non-Explosive. Unstable *Compressed Gases*: No Rating. *Pyrophorics*: No Rating. *Oxidizers*: No "0" rating allowed. *Unstable Reactives*: Substances that will not polymerize, decompose, condense or self-react.); **1** (*Water Reactivity*: Materials that change or decompose upon exposure to moisture. *Organic Peroxides*: Materials that are normally stable, but can become unstable at high temperatures and pressures. These materials may react with water, but will not release energy. *Explosives*: Division 1.5 & 1.6 substances that are very insensitive explosives or that do not have a mass explosion hazard. *Compressed Gases*: Pressure below OSHA definition. *Pyrophorics*: No Rating. *Oxidizers*: Packaging Group III; Solids: any material that in either concentration tested, exhibits a mean burning time less than or equal to the mean burning time of a 3:7 potassium bromate/cellulose mixture and the criteria for Packing Group I and II are not met. Liquids: any material that exhibits a mean pressure rise time less than or equal to the pressure rise time of a 1:1 nitric acid (65%)/cellulose mixture and the criteria for Packing Group I and II are not met. *Unstable Reactives*: Substances that may decompose, condense or self-react, but only under conditions of high temperature and/or pressure and have little or no potential to cause significant heat generation or explosive hazard. Substances that readily undergo hazardous polymerization in the absence of inhibitors.); **2** (*Water Reactivity*: Materials that may react violently with water. *Organic Peroxides*: Materials that, in themselves, are normally unstable and will readily undergo violent chemical change, but will not detonate. These materials may also react violently with water. *Explosives*: Division 1.4 – Explosive substances where the explosive effect are largely confined to the package and no projection of fragments of appreciable size or range are expected. An external fire must not cause virtually instantaneous explosion of almost the entire contents of the package. *Compressed Gases*: Pressurized and meet OSHA definition but < 514.7 psi absolute at 21.1°C (70°F) [500 psig]. *Pyrophorics*: No Rating. *Oxidizers*: Packing Group II Solids: any material that, either in concentration tested, exhibits a mean burning time of less than or equal to the mean burning time of a 2:3 potassium bromate/cellulose mixture and the criteria for Packing Group I are not met. Liquids: any material that exhibits a mean pressure rise time less than or equal to the pressure rise of a 1:1 aqueous sodium chlorate solution (40%)/cellulose mixture and the criteria for Packing Group I are not met. *Unstable Reactives*: Substances that may polymerize, decompose, condense, or self-react at ambient temperature and/or pressure, but have a low potential for significant heat generation or explosion. Substances that readily form peroxides upon exposure to air or oxygen at room temperature);**3** (*Water Reactivity*: Materials that may form explosive reactions with water. *Organic Peroxides*: Materials that are capable of detonation or explosive reaction, but require a strong initiating source, or must be heated under confinement before initiation; or materials that react explosively with water. *Explosives*: Division 1.2 – Explosive substances that have a fire hazard and either a minor blast hazard or a minor projection hazard or both, but do not have a mass explosion hazard. *Compressed Gases*: Pressure ≥ 514.7 psi absolute at 21.1°C (70°F) [500 psig]. *Pyrophorics*: No Rating. *Oxidizers*: Packing Group I Solids: any material that, in either concentration tested, exhibits a mean burning time less than the mean burning time of a 3.:2 potassium bromate/cellulose mixture. Liquids: Any material that spontaneously ignites when mixed with cellulose in a 1:1 ratio, or which exhibits a mean pressure rise time less than the pressure rise time of a 1:1 perchloric acid (50%)/cellulose mixture. *Unstable Reactives*: Substances that may polymerize, decompose, condense or self-react at ambient temperature and/or pressure and have a moderate potential to cause significant heat generation or explosion.); **4** (*Water Reactivity*: Materials that react explosively with water without requiring heat or confinement. *Organic Peroxides*: Materials that are readily capable of detonation or explosive decomposition at normal temperature and pressures. *Explosives*: Division 1.1 & 1.2-explosive substances that have a mass explosion hazard or have a projection hazard. A mass explosion is one that affects almost the entire load instantaneously. *Compressed Gases*: No Rating. *Pyrophorics*: Add to the definition of Flammability "4". *Oxidizers*: No "4" rating. *Unstable Reactives*: Substances that may polymerize, decompose, condense or self-react at ambient temperature and/or pressure and have a high potential to cause significant heat generation or explosion.).

NATIONAL FIRE PROTECTION ASSOCIATION HAZARD RATINGS:

HEALTH HAZARD: **0** (materials that, under emergency conditions, would offer no hazard beyond that of ordinary combustible materials): Gases and vapors whose LC_{50} for acute inhalation toxicity is greater than 10,000 ppm. Dusts and mists whose LC_{50} for acute inhalation toxicity is greater than 200 mg/L. Materials whose LD_{50} for acute dermal toxicity is greater than 2000 mg/kg. Materials whose LD_{50} for acute oral toxicity is greater than 2000 mg/kg. Materials that are essentially non-irritating to the respiratory tract, eyes and skin. **1** (materials that, under emergency conditions, can cause significant irritation): Gases and vapors whose LC_{50} for acute inhalation toxicity is greater than 5,000 ppm but less than or equal to 10,000 ppm. Dusts and mists whose LC_{50} for acute inhalation toxicity is greater than 10 mg/L but less than or equal to 200 mg/L. Materials whose LD_{50} for acute dermal toxicity is greater than 1000 mg/kg but less than or equal to 2000 mg/kg. Materials whose LD_{50} for acute oral toxicity is greater than 500 mg/kg but less than or equal to 2000 mg/kg. Materials that cause slight to moderate irritation to the respiratory tract, eyes and skin.

DEFINITIONS OF TERMS (Continued)

NATIONAL FIRE PROTECTION ASSOCIATION HAZARD RATINGS (continued):

HEALTH HAZARD (continued): 2 (materials that, under emergency conditions, can cause temporary incapacitation or residual injury): Gases and vapors whose LC_{50} for acute inhalation toxicity is greater than 3,000 ppm but less than or equal to 5,000 ppm. Dusts and mists whose LC_{50} for acute inhalation toxicity is greater than 2 mg/L but less than or equal to 10 mg/L. Materials whose LD_{50} for acute dermal toxicity is greater than 200 mg/kg but less than or equal to 1000 mg/kg. Materials whose LD_{50} for acute oral toxicity is greater than 50 mg/kg but less than or equal to 500 mg/kg. Any liquid whose saturated vapor concentration at 20°C (68°F) is equal to or greater than one-fifth its LC_{50} for acute inhalation toxicity, if its LC_{50} is less than or equal to 5000 ppm and that does not meet the criteria for either degree of hazard 3 or degree of hazard 4. Compressed liquefied gases with boiling points between -30°C (-22°F) and -55°C (-66.5°F) that cause severe tissue damage, depending on duration of exposure. Materials that are respiratory irritants. Materials that cause severe, but reversible irritation to the eyes or are lachrymators. Materials that are primary skin irritants or sensitizers. 3 (materials that, under emergency conditions, can cause serious or permanent injury): Gases and vapors whose LC_{50} for acute inhalation toxicity is greater than 1,000 ppm but less than or equal to 3,000 ppm. Dusts and mists whose LC_{50} for acute inhalation toxicity is greater than 0.5 mg/L but less than or equal to 2 mg/L. Materials whose LD_{50} for acute dermal toxicity is greater than 40 mg/kg but less than or equal to 200 mg/kg. Materials whose LD_{50} for acute oral toxicity is greater than 5 mg/kg but less than or equal to 50 mg/kg. Any liquid whose saturated vapor concentration at 20°C (68°F) is equal to or greater than one-fifth its LC_{50} for acute inhalation toxicity, if its LC_{50} is less than or equal to 3000 ppm and that does not meet the criteria for degree of hazard 4. Compressed liquefied gases with boiling points between -30°C (-22°F) and -55°C (-66.5°F) that cause frostbite and irreversible tissue damage. Materials that are respiratory irritants. Cryogenic gases that cause frostbite and irreversible tissue damage. Materials that are corrosive to the respiratory tract. Materials that are corrosive to the eyes or cause irreversible corneal opacity. Materials that are corrosive to the skin. 4 (materials that, under emergency conditions, can be lethal): Gases and vapors whose LC_{50} for acute inhalation toxicity less than or equal to 1,000 ppm. Dusts and mists whose LC_{50} for acute inhalation toxicity is less than or equal to 0.5 mg/L. Materials whose LD_{50} for acute dermal toxicity is less than or equal to 40 mg/kg. Materials whose LD_{50} for acute oral toxicity is less than or equal to 5 mg/kg. Any liquid whose saturated vapor concentration at 20°C (68°F) is equal to or greater than one-fifth its LC_{50} for acute inhalation toxicity, if its LC_{50} is less than or equal to 1000 ppm.

FLAMMABILITY HAZARD: 0 Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand: Materials that will not burn in air when exposed to a temperature of 816°C (1500°F) for a period of 5 minutes in according with Annex D. 1 Materials that must be preheated before ignition can occur. Materials in this degree require considerable preheating, under all ambient temperature conditions, before ignition and combustion can occur: Materials that will burn in air when exposed to a temperature of 816°C (1500°F) for a period of 5 minutes in accordance with Annex D. Liquids, solids and semisolids having a flash point at or above 93.4°C (200°F) (i.e. Class IIIB liquids). Liquids with a flash point greater than 35°C (95°F) that do not sustain combustion when tested using the Method of Testing for Sustained Combustibility, per 49 CFR 173, Appendix H or the UN Recommendation on the Transport of Dangerous Goods, Model Regulations (current edition) and the related Manual of Tests and Criteria (current edition). Liquids with a flash point greater than 35°C (95°F) in a water-miscible solution or dispersion with a water non-combustible liquid/solid content of more than 85 percent by weight. Liquids that have no fire point when tested by ASTM D 92 Standard Test Method for Flash and Fire Points by Cleveland Open Cup, up to a boiling point of the liquid or up to a temperature at which the sample being tested shows an obvious physical change. Combustible pellets with a representative diameter of greater than 2 mm (10 mesh). Solids containing greater than 0.5 percent by weight of a flammable or combustible solvent are rated by the closed up flash point of the solvent. Most ordinary combustible materials. 2 Materials that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur. Materials in this degree would not under normal conditions form hazardous atmospheres with air, but under high ambient temperatures or under moderate heating could release vapor in sufficient quantities to produce hazardous atmospheres with air: Liquids having a flash point at or above 37.8°C (100°F) and below 93.4°C (200°F) (i.e. Class II and Class IIIA liquids.) Solid materials in the form of powders or coarse dusts of representative diameter between 420 microns (40 mesh) and 2 mm (10 mesh) that burn rapidly but that generally do not form explosive mixtures in air. Solid materials in fibrous or shredded form that burn rapidly and create flash fire hazards, such as cotton, sisal and hemp. Solids and semisolids that readily give off flammable vapors. Solids containing greater than 0.5 percent by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent. 3 Liquids and solids that can be ignited under almost all ambient temperature conditions. Materials in this degree produce hazardous atmospheres with air under almost all ambient temperatures or, though unaffected by ambient temperatures, are readily ignited under almost all conditions: Liquids having a flash point below 22.8°C (73°F) and having a boiling point at or above 37.8°C (100°F) and those liquids having a flash point at or above 22.8°C (73°F) and below 37.8°C (73°F) and below 37.8°C (100°F) (i.e. Class IB and IC liquids). Materials that, on account of their physical form or environmental conditions, can form explosive mixtures with air and are readily dispersed in air. Flammable or combustible dusts with a representative diameter less than 420 microns (40 mesh). Materials that burn with extreme rapidity, usually by reason of self-contained oxygen (e.g. dry nitrocellulose and many organic peroxides). Solids containing greater than 0.5 percent by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent.

NATIONAL FIRE PROTECTION ASSOCIATION HAZARD RATINGS (continued):

FLAMMABILITY HAZARD (continued): 4 Materials that will rapidly or completely vaporize at atmospheric pressure and normal ambient temperature or that are readily dispersed in air and will burn readily: Flammable gases. Flammable cryogenic materials. Any liquid or gaseous materials that is liquid while under pressure and has a flash point below 22.8°C (73°F) and a boiling point below 37.8°C (100°F) (i.e. Class IA liquids). Materials that ignite when exposed to air. Solids containing greater than 0.5 percent by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent.

INSTABILITY HAZARD: 0 Materials that in themselves are normally stable, even under fire conditions: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) below 0.01 W/mL. Materials that do not exhibit an exotherm at temperatures less than or equal to 500°C (932°F) when tested by differential scanning calorimetry. 1 Materials that in themselves are normally stable, but that can become unstable at elevated temperatures and pressures: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 0.01 W/mL and below 10 W/mL. 2 Materials that readily undergo violent chemical change at elevated temperatures and pressures: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 10 W/mL and below 100W/mL. 3 Materials that in themselves are capable of detonation or explosive decomposition or explosive reaction, but that require a strong initiating source or that must be heated under confinement before initiation: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 100 W/mL and below 1000 W/mL. Materials that are sensitive to thermal or mechanical shock at elevated temperatures and pressures. 4 Materials that in themselves are readily capable of detonation or explosive decomposition or explosive reaction at normal temperatures and pressures: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) of 1000 W/mL or greater. Materials that are sensitive to localized thermal or mechanical shock at normal temperatures and pressures.

FLAMMABILITY LIMITS IN AIR:

Much of the information related to fire and explosion is derived from the National Fire Protection Association (NFPA). Flash Point - Minimum temperature at which a liquid gives off sufficient vapors to form an ignitable mixture with air. Autoignition Temperature: The minimum temperature required to initiate combustion in air with no other source of ignition. LEL - the lowest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source. UEL - the highest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source.

ECOLOGICAL INFORMATION:

EC is the effect concentration in water. **BCF** = Bioconcentration Factor, which is used to determine if a substance will concentrate in lifeforms which consume contaminated plant or animal matter. TL_m = median threshold limit; Coefficient of Oil/Water Distribution is represented by **log K_{ow}** or **log K_{oc}** and is used to assess a substance's behavior in the environment.

TOXICOLOGICAL INFORMATION:

Human and Animal Toxicology: Possible health hazards as derived from human data, animal studies, or from the results of studies with similar compounds are presented. Definitions of some terms used in this section are: **LD_{50}** - Lethal Dose (solids & liquids) which kills 50% of the exposed animals; **LC_{50}** - Lethal Concentration (gases) which kills 50% of the exposed animals; **ppm** concentration expressed in parts of material per million parts of air or water; **mg/m³** concentration expressed in weight of substance per volume of air; **mg/kg** quantity of material, by weight, administered to a test subject, based on their body weight in kg. Other measures of toxicity include **TDLo**, the lowest dose to cause a symptom and **TCLo** the lowest concentration to cause a symptom; **TDo, LDLo,** and **LDo,** or **TC, TCo, LCLo,** and **LCo,** the lowest dose (or concentration) to cause lethal or toxic effects. **Cancer Information:** The sources are: **IARC** - the International Agency for Research on Cancer; **NTP** - the National Toxicology Program, **RTECS** - the Registry of Toxic Effects of Chemical Substances, **OSHA** and **CAL/OSHA**. IARC and NTP rate chemicals on a scale of decreasing potential to cause human cancer with rankings from 1 to 4. Subrankings (2A, 2B, etc.) are also used. **Other Information: BEI** - ACGIH Biological Exposure Indices, represent the levels of determinants which are most likely to be observed in specimens collected from a healthy worker who has been exposed to chemicals to the same extent as a worker with inhalation exposure to the TLV.

REGULATORY INFORMATION:

U.S. and CANADA:

ACGIH: American Conference of Governmental Industrial Hygienists, a professional association which establishes exposure limits.

This section explains the impact of various laws and regulations on the material. **EPA** is the U.S. Environmental Protection Agency. **NIOSH** is the National Institute of Occupational Safety and Health, which is the research arm of the U.S. Occupational Safety and Health Administration (**OSHA**). **WHMIS** is the Canadian Workplace Hazardous Materials Information System. **DOT** and **TC** are the U.S. Department of Transportation and the Transport Canada, respectively. Superfund Amendments and Reauthorization Act (**SARA**); the Canadian Domestic/Non-Domestic Substances List (**DSL/NDSL**); the U.S. Toxic Substance Control Act (**TSCA**); Marine Pollutant status according to the **DOT**; the Comprehensive Environmental Response, Compensation, and Liability Act (**CERCLA** or **Superfund**); and various state regulations. This section also includes information on the precautionary warnings which appear on the material's package label. **OSHA** - U.S. Occupational Safety and Health Administration.

WALTER Surface Technologies

SAFETY DATA SHEET

COOLCUT

BIO-CIRCLE® A division of Walter Surface Technologies

Section 1. Identification

GHS product identifier : COOLCUT
Product code : 53-B 002 (400 mL)
SDS no. : L-01E
Product type : Aerosol

Identified uses
Metal cutting lubricant.

Manufacturer : Walter Surface Technologies Inc.
Bio-Circle – A Division of Walter Surface Technologies Inc.
5977 Trans Canada Highway
Pointe-Claire, QC H9R 1C1
Canada
info@walter.com
www.walter.com
General Information: 1-888-592-5837

Emergency telephone number (with hours of operation) : CANUTEC: +1-613-996-6666 or *666 (cellular)
(24/7)

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 AEROSOLS - Category 1
GASES UNDER PRESSURE - Compressed gas
AQUATIC HAZARD (ACUTE) - Category 3

GHS label elements

Hazard pictograms :

Signal word : Danger

Hazard statements : H222 - Extremely flammable aerosol.
H280 - Contains gas under pressure; may explode if heated.
H402 - Harmful to aquatic life.

Precautionary statements

Prevention : P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P251 - Pressurized container: Do not pierce or burn, even after use.
P211 - Do not spray on an open flame or other ignition source.
P273 - Avoid release to the environment.

Response : Not applicable.

Section 2. Hazards identification

Storage : P410 - Protect from sunlight.
P412 - Do not expose to temperatures exceeding 50°C/122°F.
P403 - Store in a well-ventilated place.

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

Product code : 53-B 002 (400 mL)

CAS number/other identifiers

CAS number : Not applicable.

Ingredient name	%	CAS number
phenyl phosphate	0.1 - 1	115-86-6

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. Continue to rinse for at least 20 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. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately.

Skin contact : 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. Get medical attention. Wash clothing before reuse.

Ingestion : Wash out mouth with water. 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. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately.

Most important symptoms/effects, acute and delayed

Section 4. First aid measures

Potential acute health effects

Eye contact	: No known significant effects or critical hazards.
Inhalation	: No known significant effects or critical hazards.
Skin contact	: No known significant effects or critical hazards.
Ingestion	: No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact	: Adverse symptoms may include the following: irritation redness
Inhalation	: Adverse symptoms may include the following: respiratory tract irritation coughing
Skin contact	: No known significant effects or critical hazards.
Ingestion	: No known significant effects or critical hazards.

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	: In case of fire, use foam, dry chemical or carbon dioxide.
Unsuitable extinguishing media	: Do not use water jet.
Specific hazards arising from the chemical	: Extremely flammable aerosol. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. 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. Bursting aerosol containers may be propelled from a fire at high speed. Runoff to sewer may create fire or explosion hazard. This material is harmful to aquatic life. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
Hazardous thermal decomposition products	: Decomposition products may include the following materials: carbon dioxide carbon monoxide
Special protective actions for fire-fighters	: Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
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. In the case of aerosols being ruptured, care should be taken due to the rapid escape of the pressurized contents and propellant. If a large number of containers are ruptured, treat as a bulk material spillage according to the instructions in the clean-up section. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. 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). Water polluting material. May be harmful to the environment if released in large quantities.

Methods and materials for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. 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 (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. 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). Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50°C. Do not pierce or burn, even after use. Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing gas. Avoid breathing vapor or mist. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. 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.

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.

Section 7. Handling and storage

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Protect from sunlight. Eliminate all ignition sources. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

United States

Occupational exposure limits

Ingredient name	Exposure limits
Triphenyl phosphate	**ACGIH TLV (United States, 6/2013).** TWA: 3 mg/m³ 8 hours. **NIOSH REL (United States, 4/2013).** TWA: 3 mg/m³ 10 hours. **OSHA PEL (United States, 2/2013).** TWA: 3 mg/m³ 8 hours.

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
Dimethyl ether	BC 7/2013 US AIHA 10/2011	1000 1000	- -	- -	- -	- -	- -	- -	- -	- -	

Appropriate engineering controls : No personal respiratory protective equipment normally required. Avoid breathing dust/ fume/gas/mist/vapors/spray. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

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.

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.

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.
Recommended: Nitrile gloves 0.4 mm thick, permeation time 480 minutes.

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. 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.

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 NIOSH/MSHA approved respirator if there is a risk of exposure at levels exceeding the exposure limits. Advice should be sought from respiratory protection specialists.

Section 9. Physical and chemical properties

Appearance

Physical state : Liquid. [Aerosol.]

Color : Beige.

Odor : Perceptible.

Odor threshold : Not available.

pH : Not applicable.

Melting point : Not available.

Boiling point : Not applicable.

Flash point : Not available.

Evaporation rate : Not applicable.

Flammability (solid, gas) : Extremely flammable aerosol.

Lower and upper explosive (flammable) limits : Lower: 3%
Upper: 19%

Vapor pressure : 500 kPa (3750.3 mm Hg) [@ 20°C (68°F)]

Vapor density : Not available.

Relative density : 0.78 g/ml @ 20°C (68°F)

Solubility : Insoluble in the following materials: cold water and hot water.

Partition coefficient: n-octanol/water : Not available.

Auto-ignition temperature : 235°C (455°F)

Decomposition temperature : Not available.

Viscosity : Not available.

VOC content (g/l) : 390

Aerosol product

Type of aerosol : Spray

Heat of combustion : 15.64 kJ/g

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).

Incompatible materials : 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.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Triphenyl phosphate	LD50 Dermal LD50 Oral	Rabbit Rat	>7900 mg/kg 3500 mg/kg	- -

Irritation/Corrosion

There is no data available.

Sensitization

There is no data available.

Carcinogenicity

There is no data available.

Specific target organ toxicity (single exposure)

There is no data available.

Specific target organ toxicity (repeated exposure)

There is no data available.

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 : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Section 11. Toxicological information

Eye contact : Adverse symptoms may include the following:
irritation
redness

Inhalation : Adverse symptoms may include the following:
respiratory tract irritation
coughing

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

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 : 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

There is no data available.

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Triphenyl phosphate	Acute EC50 2000 µg/L Acute EC50 1000 µg/L Acute EC50 225 µg/L Fresh water Chronic NOEC 55 µg/L Fresh water	Algae - Pseudokirchneriella subcapitata Daphnia - Daphnia magna Fish - Oncorhynchus mykiss - Fingerling Fish - Oncorhynchus mykiss - Fingerling	96 hours 48 hours 96 hours 30 days

Persistence and degradability

There is no data available.

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
Triphenyl phosphate	4.63	144	low

Section 12. Ecological information

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. Empty containers or liners may retain some product residues. Do not puncture or incinerate container.

Section 14. Transport information

	DOT	TDG	IMDG	IATA
UN number	UN1950	UN1950	UN1950	UN1950
UN proper shipping name	Aerosols, flammable (each not exceeding 1 L capacity)	Aerosols, flammable (each not exceeding 1 L capacity)	Aerosols, flammable (each not exceeding 1 L capacity)	Aerosols, flammable (each not exceeding 1 L capacity)
Transport hazard class(es)	2.1 	2.1 	2.1 	2.1 
Packing group	-	-	-	-
Environmental hazards	No.	No.	No.	No.
Additional information	-	-	-	-

AERG : 126

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. Protect from freezing. Freezing will damage product and render it unusable.

Transport in bulk according Annex II of MARPOL and the IBC Code : Not available.

Section 15. Regulatory information

U.S. Federal regulations : **United States inventory (TSCA 8b)**: All components are listed or exempted.
Clean Air Act (CAA) 112 regulated flammable substances: Dimethyl ether

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 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 : Fire hazard
Sudden release of pressure

SARA 313

No products were found.

State regulations

Massachusetts : The following components are listed: Dimethyl ether

New York : None of the components are listed.

New Jersey : The following components are listed: Dimethyl ether

Pennsylvania : The following components are listed: Dimethyl ether

California Prop. 65

No products were found.

Canada

Canadian lists

Canadian NPRI : The following components are listed: Dimethyl ether

CEPA Toxic substances : None of the components are listed.

Canada inventory : All components are listed or exempted.

International lists

National inventory

Australia : All components are listed or exempted.

China : All components are listed or exempted.

Europe : All components are listed or exempted.

Japan : All components are listed or exempted.

New Zealand : All components are listed or exempted.

Philippines : All components are listed or exempted.

Section 15. Regulatory information

Republic of Korea : All components are listed or exempted.

Section 16. Other information

History

Date of issue mm/dd/yyyy : 12/30/2015

Date of previous issue : 12/15/2014

Version : 1.1

Revised Section(s) : 2, 8, 16.

Prepared by : KMK Regulatory Services Inc.

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

SECTION I - PRODUCT IDENTIFICATION

Product name: DEEP LUBE
Chemical family: Mixture.
Product use/class: Used as a penetrant, and to lubricate and protect metal surfaces from corrosion

Supplier's name and address:
DEEP LUBE OF CANADA
7 Hiscott St.
St. Catharines, ON
L2R 1C7
Telephone: 905-704-1158

Manufacturer's name and address:
Refer to Supplier.

Emergency Tel. #: 905-651-1420

WHMIS CLASS: B2, D2B

SECTION II - HAZARDOUS INGREDIENTS

Ingredients	CAS#	wt.%	LC_{50} / 4 Hrs (Rat, inh.)	LD_{50} mg/kg (Oral, rat)	LD_{50} mg/kg (Rabbit, dermal)
Aliphatic petroleum oil	8052-41-3	30 - 60	> 5500 mg/m^3	> 5000	> 3000
Petroleum based oil	64742-65-0	30 - 60	N/Av	> 5000	> 5000

SECTION III - PHYSICAL DATA

Physical State, odour and appearance: Light amber liquid, lemon odour.
Coefficient of water/oil distribution: N/Av
Specific gravity: 0.787
Vapour pressure (PSI @ 70°C): 60.0.
Melting / Freezing point: N/Av
Vapour density (Air = 1): >1
Volatiles, %: 70.0
Odour threshold: N/Av
Viscosity (Centistokes @ 40°C): 7.06
Boiling point: N/Av
pH: N/Av
Evaporation rate (BuAe = 1): N/Av
Solubility in water: Insoluble.

SECTION IV - FIRE AND EXPLOSION DATA

Conditions of flammability: Flammable liquid and vapour. This product will be ignited by heat, sparks, direct flame and other sources of ignition.
Flash point (Method): 10°C / 50°F (TAG OPEN CUP A.S.T.M. D-1310)
Upper flammable limit %: 9.7
Lower flammable limit %: 1.9
Auto-ignition temperature: N/Av
Means of extinction: Use foam, carbon dioxide, dry chemical or water fog. Do not use water jet, as this may spread burning material.
Sensitivity to mechanical impact/static discharge: May be sensitive to static discharge. Not expected to be sensitive to mechanical impact.
Special Fire Fighting Procedures: Wear self-contained, positive pressure breathing apparatus (SCBA) and complete personal protective equipment. Move containers from fire area if it can be done without risk. Water spray may only be useful in cooling equipment exposed to heat and flame. Avoid spreading burning liquid with water spray used for cooling purposes.
Unusual Fire and Explosion Hazards: Vapours are heavier than air and collect in low-lying areas. The vapours may travel considerable distances and flashback to a distant source of ignition. Closed containers may build-up pressure when exposed to heat and flame. This product will float and may be re-ignited at the water's surface.
Hazardous Combustion Products: Carbon oxides, sulfur oxides, nitrogen oxides, phosphorous oxides and other toxic and irritating fumes and smoke.

SECTION V - REACTIVITY DATA

Stability: Stable under ambient pressure and temperature. Hazardous polymerization will not occur.
Incompatible materials: Strong oxidizing agents.
Conditions of reactivity: Stable under ambient pressure and temperature. Avoid heat, sparks, flame, and incompatible material.
Hazardous decomposition products: None known. Refer to 'Hazardous combustion products', Section 4.

SECTION VI - TOXICOLOGICAL PROPERTIES

**** Routes of exposure and acute/chronic effects ****

Exposure limit:
ACGIH - TLV: Aliphatic petroleum oil (Stoddard solvent) – 100 ppm; Petroleum based oil – 5 mg/m^3 *(As Oil mist, mineral).*
OSHA - PEL: Aliphatic petroleum oil (Stoddard solvent) – 500 ppm; Petroleum based oil – 5 mg/m^3 *(As Oil mist, mineral).*
Inhalation: Inhalation may cause irritation to the nose, throat and upper respiratory tract. Symptoms may include headache, nausea, vomiting, dizziness, drowsiness and other symptoms of central nervous system depression.
Skin: Contact with liquid may cause mild to moderate irritation.
Eyes: Exposure to high vapor concentrations or contact with liquid may cause mild irritation. Symptoms may include tearing and redness.
Ingestion: May be harmful or fatal if swallowed. Causes irritation to the mouth, throat and stomach. Symptoms may include nausea, vomiting and diarrhea. Ingestion could cause aspiration of the chemical into the lungs. Aspiration can result in life-threatening lung injury.
Chronic effect: Prolonged or repeated exposure may cause drying and cracking of the skin (dermatitis).
Carcinogenicity: None of the ingredients are classified as carcinogenic by IARC or ACGIH.
Reproductive effects, Teratogenicity, Mutagenicity: None known.
Sensitization to material: Not expected to cause allergic skin or respiratory sensitization reactions.
Synergistic materials: N/Av.
Conditions aggravated by exposure: Pre-existing skin and respiratory disorders.

SECTION VII - FIRST AID

Inhalation: Remove patient from contaminated area. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen by qualified medical personnel only. Obtain medical attention.
Skin: Remove contaminated clothing. Wash skin thoroughly with mild soap and running water. Obtain medical attention if irritation persists. Launder contaminated clothing.
Eyes: Immediately flush eyes with water for at least 15 minutes. Obtain medical attention if irritation persists.
Ingestion: If swallowed, do NOT induce vomiting. Obtain medical attention immediately! If vomiting occurs naturally, have victim lean forward to reduce the risk of aspiration into the lungs. Never give anything by mouth to an unconscious or convulsing person.

SECTION VIII - PREVENTIVE MEASURES

Spill, leak or release: Restrict access to spill area. Wear appropriate protective equipment. Eliminate all sources of heat, sparks, flame and ignition. Ventilate area of release. Stop leak if you can do so without risk. Use non-sparking tools during the clean-up process. Contain and absorb spilled material with inert, non-combustible absorbent material (e.g. sand), then place absorbent material in a suitable, closed and labelled container for later disposal (see below). Do not allow to enter sewers or confined spaces. Notify the appropriate authorities as required.
Waste disposal: Handle according to recommendations listed below. Improper disposal can cause damage to the environment. Dispose of in accordance with all applicable government Regulations.

*** PROTECTIVE EQUIPMENT ***

Respiratory protection: For prolonged exposures or if the TLV is exceeded, wear NIOSH-approved respirator. Advice should be sought from respiratory protection specialists.
Ventilation: Use in well-ventilated area. General or local exhaust ventilation may be required.
Protective gloves: Gloves impervious to the material are recommended. Advice should be sought from glove suppliers.
Eye protection: Safety goggles are recommended to prevent splashes from entering the eyes.
Other protective equipment: An eyewash station and safety shower should be made available in the immediate working area. Impervious clothing and rubber boots, and any other safety equipment may also be required, as per workplace standards.

SECTION VIII - PREVENTIVE MEASURES CONTINUED

*** STORAGE & HANDLING ***

Storage and handling conditions:

Handling: This material is a flammable, harmful liquid. Wear protective equipment during handling. Use in well ventilated area. Avoid contact with eyes, skin and clothing. Avoid inhalation. Wearing contact lenses is inadvisable. Keep away from children. Do not use near sources of heat, flame, sparks or ignition sources. Ground all equipment during handling. Use caution when opening containers. Keep away from incompatibles. Keep container tightly closed when not in use. Wash thoroughly after handling.

Storage: Store in a cool, dry, well-ventilated area away from incompatibles, heat and flame. No smoking in the area. Inspect containers periodically for damage or leaks.

Special Shipping Information – Canadian Transportation of Dangerous Goods Regulations (TDGR):

Proper Shipping Name:	PETROLEUM PRODUCTS, N.O.S.
UN No.:	UN1268
Primary Class(es):	3
Subsidiary Class(es):	None.
Packing Group:	II

Other Shipping Information: This product may be shipped by ground within Canada, as a 'Consumer commodity' or a 'Limited Quantity' when in containers which hold 1 Litre or less of the material. Refer to the TDGR Section 1.17 for additional Limited Quantity and Consumer Commodity requirements, if shipping under this exemption.

SECTION IX - PREPARATION INFORMATION

Prepared by: ICC The Compliance Center Inc. for Deep Lube of Canada
Telephone number: 905-704-1158 (Deep Lube of Canada)
Preparation date: February 21, 2007.

Additional notes or references:

Abbreviations:

ACGIH: American Conference of Governmental Industrial Hygienists
A.S.T.M.: American Society for Testing and Materials
CAS: Chemical Abstract Services
IARC: International Agency for Research on Cancer
inh: Inhalation
N/Ap: not applicable
N/Av: not available
NIOSH: National Institute of Occupational Safety and Health
OSHA: Occupational Safety & Health Administration
PEL: Permissible Exposure Limit
RTECs: Registry of Toxic Effects of Chemical Substances
TLV: Threshold Limit Values
WHMIS: Workplace Hazardous Materials Information System

Reference:
1. ACGIH, Threshold Limit Values and Biological Exposure Indices for 2006.
2. International Agency for Research on Cancer Monographs, searched 2007.
3. Canadian Centre for Occupational Health and Safety, CCInfoWeb databases, 2007 (Chempendium and RTECs).
4. Material Safety Data Sheet from manufacturer.

END OF DOCUMENT

STRIKE FIRST CORPORATION

777 Tapscott Road
Scarborough, Ontario
M1X 1A2

MATERIAL SAFETY DATA SHEET

Prepared to US OSHA, CMA, ANSI and Canadian WHMIS Standards

PART I . What is the material and what do I need to know in an emergency?

1. PRODUCT IDENTIFICATION

TRADE NAME (AS LABELED):	**ABC SUPER 90 DRY CHEMICAL**	
SYNONYMS:	**Multi-purpose Dry Chemical**	
MANUFACTURER'S NAME:	**STRIKE FIRST CORPORATION**	
ADDRESS:	**c/o STEEL FIRE EQUIPMENT LTD.**	
	150 Superior Blvd.	
	Missisauga, Ontario	
	L5T 2L2	
BUSINESS PHONE:	**416.299.7767**	
EMERGENCY CONTACTS:	**Chemtrec**	**1.800.424.9300**
	In Canada – Canutec	**613.996.6666**
DATE OF REVISION:	**Feb. 6, 2015**	

2. COMPOSITION AND INFORMATION ON INGREDIENTS

CHEMICAL NAME	CAS #	% W/W	EXPOSURE LIMITS IN AIR					
			ACGIH		OSHA			
			TLV mg/m3	STEL mg/mm3	PEL mg/m3	STEL mg/m3	IDLH mg/m3	OTHER
Mono Ammonium Phosphate Ammonium Sulfate	7722-76-1 7783-20-2	>94	> 94 ACGIH TLV for particulars, Not Otherwise Classified = 10; OSHA PEL for Particulars Not Otherwise Regulated, Total Dust = 15, Respirable Fraction 5.					
Mica	12001-26-2	<3	3 (Respirable Fraction)	NE	6 (Respirable Fraction)	NE	NE	NE
Attaclay	8031-18-3	<3	NE	NE	NE	NE	NE	NE
Silicone Oil	63148-57-2	<1	NE	NE	NE	NE	NE	NE
Calcium Carbonate	471-34-1	<1						
Silica	112926-00-8	<1	2	NE	6	NE	NE	NE
Yellow Pigment	5468-75-7	<1	NE	NE	NE	NE	NE	NE

NE = Not Established C = Ceiling Level See Section 16 for Definitions of Terms Used

Note: All WHMIS required information is included. It is located in appropriate sections on the ANSI 1400.1-1996 format

3. HAZARD IDENTIFICATION

EMERGENCY OVERVIEW: This mixture of dry chemicals poses little hazard. Mechanical irritation of the eyes is possible during the use and maintenance of the extinguishing units. Chronic inhalation of any particulate may damage the lungs.

SYMPTOMS OF OVER-EXPOSURE BY ROUTE OF EXPOSURE: Over-exposure to this product may cause mild skin irritation, moderate eye irritation, and possible gastric distress. The product is not known to cause chronic illness.

INHALATION: Inhalation of this product should be avoided, but if it occurs, may cause mild irritation of the nose, throat, and other tissues of the respiratory system.

CONTACT WITH SKIN OR EYES: Contact of dust from this product with the eyes may cause moderate irritation, reddening of the affected eye, and discomfort.

SKIN ABSORPTION: No component of this product is known to absorb through the skin.
INGESTION: Ingestion of this product may cause gastric distress.

INJECTION: While injection of this product is unlikely, it may occur as a result of a puncture or cut with a sharp object contaminated with the extinguishing agent. Mild symptoms, similar to those of skin irritation may occur.

HEALTH EFFECTS OR RISKS FROM EXPOSURE: An Explanation in Lay Terms. This product poses low, acute health risks.

HAZARDOUS MATERIAL INFORMATION SYSTEM

HEALTH	(BLUE)	1
FLAMMABILITY	(RED)	0
REACTIVITY	(YELLOW)	1

PROTECTIVE EQUIPMENT

EYES	RESPIRATION	HANDS	BODY
	See Section 8		See Section 8

For routine industrial applications

ACUTE: This extinguishing material presents only a slight risk of causing acute health effects. If such effects occur, they will be in the form of mild irritation of the skin, nose, or throat and mild irritation of the eyes. If ingested, this product may cause an upset stomach.

CHRONIC: This product is not known to cause chronic illnesses or diseases.

Hazard symbols: WHMIS (Canadian workplace hazardous materials identification system)
D2B – Product may irritate eyes, skin, or mucous membranes

PART II . What should I do if a hazardous situation occurs?

4. FIRST AID MEASURES

SKIN EXPOSURE: If spilled on skin, immediately begin decontamination with running water. Remove exposed or contaminated clothing, taking care not to contaminate eyes. If reddening or irritation occurs, victim and rescuers must seek immediate medical attention.

EYE EXPOSURE: If chemical is splashed in eyes, open victim's eyes while under gentle running water. Use sufficient force to open eyelids. Have victim "roll" eyes. Minimum flushing is for 15 minutes.

INHALATION: If chemical is inhaled, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. If reddening or irritation occurs, victim and rescuers must seek immediate medical attention.

INGESTION: If chemical is swallowed, **CALL PHYSICIAN OR POISON CONTROL CENTRE FOR MOST CURRENT INFORMATION**. 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.

If exposure causes obvious distress, victim(s) and rescuers must be taken for medical attention. Take copy of label and MSDS to physician or health professional with victim.

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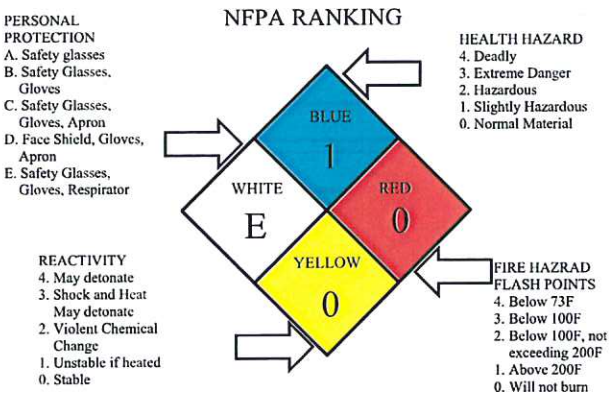
5. FIRE FIGHTING MEASURES

FLASH POINT, C (method): Not applicable
AUTOIGNITION TEMPERATURE, C: Not applicable
FLAMMABLE LIMITS (in air by volume %) Lower (LEL): Not applicable
Upper (LEL): Not applicable

FIRE EXINTGUISHING MATERIALS: None. This product is a fire extinguishing agent.
UNUSUAL FIRE AND EXPLOSION HAZARDS: When involved in a fire, this material may decompose and produce irritating fumes and toxic gases including sulfur oxides, carbon dioxide and carbon monoxide.
Explosion Sensitivity to Mechanical Impact: Not sensitive
Explosion Sensitivity to Static Discharge: Not sensitive
SPECIAL FIRE FIGHTING PROCEDURES: When involved incipient fire responders should wear eye protection. Structural fire fighters must wear Self-Contained Breathing Apparatus and full protective equipment.



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6. ACCIDENTAL RELEASE MEASURES

SPILL AND LEAK RESPONSE: Uncontrolled releases should be responded to by trained personnel using preplanned procedures. Proper protective equipment should be used. In case of spill, clear the affected area, protect people, and respond with trained personnel. If it is determined that exposure guidelines for nuisance particulates – 10mg/m3 (total particulates) or 5mg/m3 (respirable particulates) is exceeded, use *(continued on next page)*

Level C: triple gloves (rubber gloves with nitrile gloves, over latex gloves), chemically resistant suit and boots, hard hat, and purifying respirator with a HEPA filter.
Sweep up the spilled solid and place all spill residue in a double plastic bag and seal. Dispose of in accordance with Federal, Provincial, and local hazardous waste disposal regulations (see Sections 13).

PART III . How can I prevent hazardous situations from occurring?

7. HANDLING AND STORAGE

WORK PRACTICES AND HYGIENE PRACTICES: Avoid getting chemicals ON YOU or IN YOU. Wash hands after handling chemicals. Do not eat or drink while handling chemicals.

STORAGE AND HANDLING PRACTICES: All employees who handle this material should be trained to handle it safely. Avoid breathing dusts generated by this product.

PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT: Follow practices indicated in Section 6 (Accidental Release Measures). Make certain application equipment is locked and tagged-out safely. Always use this product in areas where adequate ventilation is provided. Decontaminate equipment using soapy water before maintenance begins. Collect all rinsates and dispose of according to applicable Federal, Provincial, or local procedures.

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8. EXPOSURE CONTROLS - PERSONAL PROTECTION

VENTILATION AND ENGINEERED CONTROLS: Use with adequate ventilation. Use a mechanical fan or vent area to outside.

RESPIRATORY PROTECTION: Respiratory protection is not expected to be needed. Maintain airborne contaminant concentrations below guidelines for nuisance particulates: 10 mg/m3 (total particulates) or 5 mg/m3 (respirable particulates). If respiratory protection is needed, use only protection authorized in 29CFR 1910.134, or applicable Provincial regulations. Use supplied air respiratory protection if oxygen levels are below 19.5%.

EYE PROTECTION: Safety glasses

HAND PROTECTION: Wear rubber gloves for routine industrial use. Use triple gloves for spill response, as stated in Section 6 of this MSDS.

BODY PROTECION: Use body protection appropriate for task.

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9. PHYSICAL AND CHEMICAL PROPERTIES

VAPOR DENSITY: < 1 mm Hg **EVAPORATION RATE (n-BuAc=1):** Not applicable

SPECIFIC GRAVITY: Approximately 0.85 **MELTING POINT RANGE:** Not applicable

SOLUBILITY IN WATER: Not soluble. Water repellent coating **BOILING POINT:** Not applicable

VAPOR PRESSURE, mm Hg@20 C: Not applicable **pH (10% solution):** Approx. 4-5

APPEARANCE AND COLOUR: This material is a finely divided, yellowish powder

HOW TO DETECT THIS SUBSTANCE (warning properties): This product does not have any specific warning properties.

10. STABILITY AND REACTIVITY

STABILITY: Stable

DECOMPOSITION PRODUCTS: Sulfur oxides, carbon monoxide and carbon dioxide

MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: Strong alkalis, magnesium, swimming pool sanitizers (inorganic perachlorates, sodium dichloroisacyanurate dehydrate, trichloroisacyanuric acid, calcium hypochlorite, and other strong oxidizers).

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: Incompatible materials

PART IV Is there any other useful information about this material?

11. TOXICOLOGICAL INFORMATION

TOXICITY DATA: The following data is available for components of this product greater than 1% by weight in concentration.

AMMONIUM SULFATE
TDLo (oral, man) = 150 mg/kg
LD50 (oral, rat) = 3000 mg / kg
LD50 (interperitoneal, rat) = 610 mg/kg

MONOAMMONIUM PHOSPHATE

No toxicology information listed

SUSPECTED CANCER AGENT: This product's ingredients are not found on the following lists: FEDERAL OSHA Z LIST, NTP,CAL/OSHA. A variety of silica forms (i.e. crystalline, fumed) are reported in IARC as a Group 3 Compound (Human Inadequate Evidence: Animal Inadequate Evidence).

IRRITANCY OF PRODUCT: This product may cause mild skin and respiratory irritation and moderate eye irritancy.

SENSITIZATION TO THE PRODUCT: This product is not known to cause sensitization.

REPRODUCTIVE TOXICITY INFORMATION: Listed below is information concerning the effects of this product and its components on the human system.

Mutagenicity: This product is not known to cause mutagenic effects
Teratogenicity: This product is not known to cause teratogenic effects
Reproductive Toxicity: This product is not known to cause reproductive toxicity effects

A mutagen is a chemical which causes permanent changes to genetic material (DNA) such that the changes will propagate through generational lines. A teratogen is a chemical which causes damage to a developing fetus, but the damage does not propagate across generational lines. A reproductive toxin is any substance which interferes in any way with the reproductive process.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Prolonged contact with this product may cause pre-existing dermatitis to become aggravated. Persons sensitive to pulmonary irritation upon exposure to high concentrations of dust should use appropriate engineering controls or respiratory protection when recharging fire extinguishers.

RECOMMENDATION TO PHYSICIANS: Treat patient symptoms. This product should not cause any notable clinical symptoms.

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL STABILITY: No adverse environmental consequences are expected

EFFECT OF MATERIAL ON PLANTS OR ANIMALS: None currently known

EFFECT OF CHEMICAL ON AQUATIC LIFE: Not expected to harm aquatic life

13. DISPOSAL CONSIDERATIONS

PREPARING WASTES FOR DISPOSAL: Waste disposal must be in accordance with appropriate Federal, Provincial, and local regulations. This chemical, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority. Residue from fires extinguished with this material may be hazardous.

14. TRANSPORTATION INFORMATION

THIS MATERIAL IS NOT HAZARDOUS AS DEFINED BY 49 CFR 172.101 BY THE US DEPARTMENT OF TRANSPORTATION

PROPER SHIPPING NAME:	Not applicable
HAZARD CLASS NUMBER AND DESCRIPTION:	Not applicable
UN IDENTIFICATION NUMBER:	Not applicable
PACKING GROUP:	Not applicable
DOT LABEL(S) REQUIRED:	Not applicable
EMERGENCY RESPONSE GUIDE NUMBER:	Not applicable
MARINE POLLUTANT:	Not applicable

THIS MATERIAL IS NOT HAZARDOUS AS DEFINED BY TRANSPORT CANADA "TRANSPORTATION OF DANGEROUS GOODS" REGULATIONS.

When shipped in a stored pressure type fire extinguisher, and with a non-flammable, non-toxic inert expellant gas, the fire extinguisher is considered a hazardous material by the US Department of Transportation and Transport Canada. The proper shipping name shall be FIRE EXTINGUISHER and the UN designation is UN 1044. The DOT hazard class / division is 2.2. Non-flammable Gas. Packing Group – N/A.

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15. REGULATORY INFORMATION

SARA REPORTING REQUIREMENTS: No component of this product is subject to the reporting requirements of Section 302, 304, and 313 of Title III of the Superfund Amendments and Reauthorization Act.

SARA Threshold Planning Quantity: Not applicable

TSCA INVENTORY STATUS: All components are listed on the TSCA Inventory

CERCLA REPORTABLE QUANTITY (RO): Not applicable

OTHER FEDERAL REGULATIONS: Not applicable

STATE REGULATORY INFORMATION: Chemicals in this product are covered under specific State regulations, as denoted below:

Alaska – Designated Toxic and Hazardous Substances: None
Massachusetts – Substance List: Mica Dust, Ammonium Sulfate
Pennsylvania – Hazardous Substance List: None
California – Permissible Exposure Limits for Chemical Contaminants: None
Minnesota – List of Hazardous Substances: None

Rhode Island - Hazardous Substance List: Mica Dust, Ammonium Sulfate
Florida- Substance List – Mica Dust, Ammonium Sulfate
Missouri – Employer Information / Toxic Substance List: None
Texas – Hazardous Substance List: None
Illinois – Toxic Substance List – None.
North Dakota – List of Hazardous Chemicals, Reportable Quantities. None
West Virginia – Hazardous Substance List: None
Kansas – Section 302/313 List: None
Wisconsin – Toxic and Hazardous Substance: None.

CALIFORNIA PROPOSITION 65: No component is listed on the California Proposition 65 lists.

Labeling: CAUTION! May cause skin or eye irritation. Avoid contact with skin or eyes. In the event of contact, rinse affected part of your body with water for at least 15 minutes. Seek medical attention if reddening or irritation occurs. Keep container tightly closed. Store in a cool, dry location away from incompatible materials. Clean up spills promptly. This product will not contribute to the intensity of a fire.

TARGET ORGANS: Skin, eyes

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16. OTHER INFORMATION

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. Steel Fire Equipment Ltd. assumes no responsibility for injury to the vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Additionally, Steel Fire Equipment Ltd. assumes no responsibility for injury to the 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.

DEFINITION OF TERMS

A large number of abbreviations and acronyms appear on a MSDS. Some of these which are commonly used include the following:

CAS# - This is the chemical abstract number which uniquely identifies each constituent. It is used for computer related searching.

EXPOSURE LIMITS IN AIR:

ACGIH – American Conference of Government Industrial Hygenists, a professional association which establishes exposure limits.

TLV – Threshold Limit Value – an airborne concentration of a substance which represents conditions under which it is generally believed that nearly all workers may be repeatedly exposed without adverse effects. The duration must be considered, including the 8 hour Time Weighted Average (TWA), the 15 minute Short Term Exposure Limit, and the instantaneous Ceiling Level. Skin absorption effects must also be considered.

OSHA – US Occupational Safety and Health Administration

PEL – Permissible Exposure Limit – this exposure value means exactly the same as a TLV, except that it is enforceable by OSHA. The IDLH Immediately Dangerous to Life and Health Level represents a concentration from which one can escape within 30 minutes without suffering escape preventing or permanent injury. The DFG – MAK is the Republic of Germany's Maximum Exposure Level, similar to the US PEL. NIOSH is the National Institute of Occupational Safety and Health which is the research arms of the US Occupational Safety and Health Administration (OSHA). NIOSH issues exposure guidelines called Recommended Exposure Levels (RELS). When no exposure guidelines are established an entry of NE is made for reference.

FLAMMABILITY LIMITS IN AIR – Much of the information related to fire and explosion is derived from the National Fire Protection Association (NFPA). LEL – the lowest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source. UEL – the highest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source.

TOXICOLOGICAL INFORMATION

Possible health hazards are derived from human data, animal studies or from the results of studies with similar compounds are presented. Definitions of some terms used in this section are:

LD50 – Lethal Dose (solids and liquids) which kills 50% of the exposed animals LC50 – Lethal Concentration (gasses) which kills 50% of the exposed animals Ppm – concentration expressed in parts of material per million parts of air or water Mg/m3 – concentration expressed in weight of substance per volume of air
Mg/kg – quantity of material, by weight, administered to a test subject, based on their body weight in kg.

Data from several sources are used to evaluate the cancer causing potential of the material. The sources are:

IARC – the International Agency for Research on Cancer
NTP – the National Toxicology Program
RTECS – The Registry of Toxic Effects of Chemical Substances, OSHA and CAL/OSHA
IARC and **NTP** rate chemicals on a scale of decreasing potential to cause human cancer with rankings from 1 to 4. Sub rankings (2A, 2B, etc.) are also used. Other measures of toxicity include:

TDLo – the lowest dose to cause a symptom
TDo, LDLo, and LDo – the lowest dose to cause death.

REGULATORY INFORMATION

This section explains the impact of various laws and regulations on the material.

EPA is the US Environmental Protection Agency
WHMIS is the Canadian Workplace Hazard Information System
DOT and **CTC** are the US Department of Transportation and the Canadian Transportation Commission, respectively.
SARA – Superfund Amendments and Reauthorization Act
TSCA – The Toxic Substance Control Act
California Proposition 65 – California Safe Drinking Water Act
CERCLA – the Comprehensive Environmental Response, Compensation and Liability Act

This section also includes information on the precautionary warnings which appear on the materials package label.

FIRE EXTINGUISHER
Cautions and Warnings

Fire extinguishers are designed and produced for the specific purpose of providing a safe and efficient safety tool to be used only in the fighting of fires. Improper or careless use may cause severe bodily injury and / or property damage.

Contents are under pressure which is necessary to deliver the contained extinguishing agent to the fire source. Please take note of the following safety information:

- Contents under pressure. Do not puncture, incinerate, or discharge into another person's face
- Do not store at high temperatures above 120 degrees Fahrenheit or 49 degrees Celsius
- Keep away from children
- Avoid inhaling the extinguishing agent. Avoid inhaling smoke and fumes – all fires release toxic substances that are harmful. DO NOT remain in a closed area after use; evacuate the area immediately and ventilate thoroughly before re-entering.
- Although extinguishing agents are non-toxic when used properly, contact with them may cause irritation to eyes, nose, throat, and other allergic symptoms.

Refer to specific extinguishing agent material safety data sheet for additional information.

AVOID INHALING SMOKE AND FUMES; ALL FIRES RELEASE TOXIC SUBSTANCES THAT ARE HARMFUL. DO NOT REMAIN IN CLOSED AREA AFTER USE. VENTILATE CLOSED AREAS BEFORE RETURNING.

Safety Data Sheet

classification according to Canadian Hazardous Products Regulation

WINDEX® ORIGINAL GLASS CLEANER

Version 1.0

Print Date 06/20/2017

Revision Date 05/23/2017

SDS Number 350000014153

1. PRODUCT AND COMPANY IDENTIFICATION

Product information

Product name	:	WINDEX® ORIGINAL GLASS CLEANER
Recommended use	:	Hard Surface Cleaner
Restrictions on use	:	Use only as directed on label
Manufacturer, importer, supplier	:	S.C. Johnson and Son, Limited 1 Webster Street Brantford ON N3T 5R1
Telephone	:	+1-800-558-5566
Emergency telephone number	:	24 Hour Transport & Medical Emergency Phone (866) 231-5406 24 Hour International Emergency Phone (952) 852-4647 24 Hour Canadian Transport Emergency Phone (CANUTEC) (613) 996-6666

2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

Globally Harmonized System (GHS) Classification
This product does not meet the criteria for classification in any hazard class according to the Canadian Hazardous Products Regulation

Labelling

Precautionary statements

Other hazards : None identified

3. COMPOSITION/INFORMATION ON INGREDIENTS

This product does not contain hazardous chemicals at or above a reportable level as defined by Canadian Hazardous Products Regulation

For additional information on product ingredients, see www.whatsinsidescjohnson.com.

4. FIRST AID MEASURES

Description of first aid measures

Eye contact	:	No special requirements
Skin contact	:	No special requirements
Inhalation	:	No special requirements.
Ingestion	:	No special requirements

Most important symptoms and effects, both acute and delayed

Eyes	:	No adverse effects expected when used as directed.
Skin effect	:	No adverse effects expected when used as directed.
Inhalation	:	No adverse effects expected when used as directed.
Ingestion	:	No adverse effects expected when used as directed.

Indication of any immediate medical attention and special treatment needed

See Description of first aid measures unless otherwise stated.

5. FIREFIGHTING MEASURES

Suitable extinguishing media	:	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Specific hazards during firefighting	:	Container may melt and leak in heat of fire.

Further information	:	Fight fire with normal precautions from a reasonable distance. Standard procedure for chemical fires. Wear full protective clothing and positive pressure self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions	:	Wash thoroughly after handling.
Environmental precautions	:	Outside of normal use, avoid release to the environment.
Methods and materials for containment and cleaning up	:	Dike large spills. Clean residue from spill site.

7. HANDLING AND STORAGE

Handling

Precautions for safe handling	:	Avoid contact with skin, eyes and clothing. For personal protection see section 8. KEEP OUT OF REACH OF CHILDREN AND PETS.
Advice on protection against fire and explosion	:	Normal measures for preventive fire protection.

Storage

Requirements for storage areas and containers	:	Keep container closed when not in use.
Other data	:	Stable under normal conditions.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Limits

ACGIH or OSHA exposure limits have not been established for this product or reportable ingredients unless noted in the table above.

Personal protective equipment

Respiratory protection	:	No special requirements.
Hand protection	:	No special requirements.
Eye protection	:	No special requirements.
Skin and body protection	:	No special requirements.
Hygiene measures	:	Handle in accordance with good industrial hygiene and safety practice. Wash thoroughly after handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form	:	liquid
Color	:	blue
Odour	:	floral
Odour Threshold	:	Test not applicable for this product type
pH	:	10.7 at (25 C)
Melting point/freezing point	:	0 C

Initial boiling point and boiling range	:	100 C
Flash point	:	does not flash
Evaporation rate	:	Test not applicable for this product type
Flammability (solid, gas)	:	Does not sustain combustion.
Upper/lower flammability or explosive limits	:	Test not applicable for this product type
Vapour pressure	:	Calculated31.7 hPa
Vapour density	:	Test not applicable for this product type
Relative density	:	1.00 g/cm3 at 25 C
Solubility(ies)	:	soluble
Partition coefficient: n-octanol/water	:	Test not applicable for this product type
Auto-ignition temperature	:	Test not applicable for this product type
Decomposition temperature	:	Heating can release hazardous gases.
Viscosity, dynamic	:	similar to water
Viscosity, kinematic	:	similar to water

Oxidizing properties	:	Test not applicable for this product type
Volatile Organic Compounds Total VOC (wt. %)*	:	0.2 % - additional exemptions may apply *as defined by US Federal and State Consumer Product Regulations
Other information	:	None identified

10. STABILITY AND REACTIVITY

Reactivity	:	No dangerous reaction known under conditions of normal use.
Chemical stability	:	Stable under recommended storage conditions.
Possibility of hazardous reactions	:	If accidental mixing occurs and toxic gas is formed, exit area immediately. Do not return until well ventilated.
Conditions to avoid	:	Direct sources of heat.
Incompatible materials	:	Do not mix with bleach or any other household cleaners. Strong bases
Hazardous decomposition products	:	Thermal decomposition can lead to release of irritating gases and vapours.

11. TOXICOLOGICAL INFORMATION

Acute oral toxicity	:	LD50 > 5000 mg/kg

Acute inhalation toxicity : LC50 > 10 mg/L

Acute dermal toxicity : LD50 > 5000 mg/kg

GHS Properties	Classification	Routes of entry
Acute toxicity	No classification proposed	Oral
Acute toxicity	No classification proposed	Dermal
Acute toxicity	No classification proposed	Inhalation - Dust and Mist
Acute toxicity	No classification proposed	Inhalation - Vapour
Acute toxicity	No classification proposed	Inhalation - Gas
Skin corrosion/irritation	No classification proposed	-
Serious eye damage/eye irritation	No classification proposed	-
Skin sensitisation	No classification proposed	-
Respiratory sensitisation	No classification proposed	-
Germ cell mutagenicity	No classification proposed	-
Carcinogenicity	No classification proposed	-
Reproductive toxicity	No classification proposed	-
Specific target organ toxicity - single exposure	No classification proposed	-
Specific target organ toxicity - repeated exposure	No classification proposed	-
Aspiration hazard	No classification proposed	-

Aggravated Medical : None known.

Condition

12. ECOLOGICAL INFORMATION

Product : The product itself has not been tested.

Toxicity
The ingredients in this formula have been reviewed and no adverse impact to the environment is expected when used according to label directions.

No environmental data required.

No environmental data required.

Other adverse effects : None known.

13. DISPOSAL CONSIDERATIONS

Consumer may discard empty container in trash, or recycle where facilities exist.

14. TRANSPORT INFORMATION

Please refer to the Bill of Lading/receiving documents for up-to-date shipping information.

Land transport
Not classified as dangerous in the meaning of transport regulations.

Sea transport
Not classified as dangerous in the meaning of transport regulations.

Air transport
Not classified as dangerous in the meaning of transport regulations.

15. REGULATORY INFORMATION

Notification status	:	All ingredients of this product are listed or are excluded from listing on the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.
Notification status	:	All ingredients of this product comply with the New Substances Notification requirements under the Canadian Environmental Protection Act (CEPA).
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.
Canada Regulations	:	This product has been classified in accordance with the hazard criteria of the Hazardous Products Act and Regulations.

16. OTHER INFORMATION

HMIS Ratings

Health	1
Flammability	0
Reactivity	0

WINDEX® ORIGINAL GLASS CLEANER

Version 1.0

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Revision Date 05/23/2017

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NFPA Ratings

Health	1
Fire	0
Reactivity	0
Special	-

This information is being provided in accordance with Canada's Workplace Hazard Material Information System. The information supplied is designed for workplaces where product use and frequency of exposure exceeds that established for the labeled consumer use.

Further information

This document has been prepared using data from sources considered to be technically reliable. It does not constitute a warranty, expressed or implied, as to the accuracy of the information contained herein. Actual conditions of use are beyond the seller's control. User is responsible to evaluate all available information when using product for any particular use and to comply with all Federal, State, Provincial and Local laws and regulations.

Prepared by	SC Johnson Global Safety Assessment & Regulatory Affairs (GSARA)

Personal Protective Equipment		WHMIS Pictograms
		**Not Controlled**
Protective Gloves	Safety Glasses	

SECTION 1 : IDENTIFICATION

Product Name:	**Fiber Glass Insulation Made With Purefiber® Technology Unfaced Products**
MSDS Manufacturer Number:	13614-NAM
Synonyms:	Acoustical Backing Board, Attic Door Insulator, Attic Hatch Insulator, Attic Scuttle Insulator, Batts in Bags, Blended Blowing Wool, Cathedral Batt Insulation, Cavity Wall, Cold Storage Wall, Curtain Wall 225, ECOTOUCH™, FDM ARP100, FDM ARP125, Flexible Marine, Flexible Type 75 AF-FDM, HV-24, HV-26, H2V-1000, H2V-2000, Insulation Batts, Manufactured Housing Insulation, Masonry Wall Insulation, Metal Building (all types), Metal Framing Batts, Metal Framing Insulation, Multi-purpose Insulation, Noise Stop Board, Pink® Insulation, Pink Pak, QuietZone® Acoustic Batt, RA Series, Shaft Wall, Sill Sealer, Sonobatts®, Sound Attenuation Batts, Standard Blend, Super Pink R Blowing Wool, ThermaGlas®, Marine Board, ULTRAVANTAGE™ Comfort Touch™, Unfaced Duct Wrap, Warm-N-Dri®, Aislhogar, Aislacustic™, MBI, MBI Certified R, Attic Blanket®, Flexible Duct Media FIBERGLAS® Insulation with PureFiber Technology®, Metal Building FIBERGLAS® Insulation with PureFiber Technology®, 701 Board
Product Use/Restriction:	Insulation
Manufacturer Name:	Owens Corning Insulating Systems, LLC
Address:	One Owens Corning Parkway Toledo, OH 43659
Customer Service Phone Number:	1-800-GET-PINK or 1-800-438-7465
Health Issues Information:	1-800-GET-PINK or 1-800-438-7465
Technical Product Information:	1-800-GET-PINK or 1-800-438-7465
Emergency Phone Number:	1-419-248-5330 (after 5pm ET and weekends)
CHEMTREC:	800-424-9300 (24 hours everyday).
Canutec:	(613) 996-6666 (Canada 24 hours everyday).
Website:	www.owenscorning.com
MSDS Creation Date:	December 16, 1997
MSDS Revision Date:	January 14, 2013

SECTION 2 : HAZARD(S) IDENTIFICATION

Applies to Product

Emergency Overview:	Exposure to dust may be irritating to eyes, nose, and throat.
Route of Exposure:	Eye contact Skin contact Inhalation
Potential Health Effects:	
Eye:	May cause irritation.
Skin:	May cause skin irritation.
Inhalation:	May cause irritation of respiratory tract.
Ingestion:	Ingestion of this product is unlikely.
Chronic Health Effects:	Long term use or contact with this product has not been shown to cause chronic health effects.
Carcinogenicity:	This material is not considered a carcinogen.
Potential Environmental Effects:	There is no known ecological information for this material.
Aggravation of Pre-Existing Conditions:	Chronic respiratory or skin conditions may temporarily worsen from exposure to this product.

SECTION 3 : COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS#	Ingredient Percent	EC Num.
Fiber Glass (Wool)	65997-17-3	85 - 100 by weight	266-046-0
Cured Binder	N/A	0 - 15 by weight	

Non-Hazardous Statement: The remaining components of this product are non-hazardous or are in a small enough quantity as to not meet regulatory thresholds for disclosure. These components contain no substances or impurities which would influence the classification of this product.

SECTION 4 : FIRST AID MEASURES

Eye Contact:
Immediately flush eyes with plenty of water for at least 15 to 20 minutes. Ensure adequate flushing of the eyes by separating the eyelids with fingers.
Do not rub or scratch eyes.
If eye irritation persists, consult a specialist.

Skin Contact:
Wash off immediately with soap and cold water.
DO NOT use warm water because this will open up the pores of the skin, which will cause further penetration of the fibers.
Use a wash cloth to help remove fibers.
DO NOT rub or scratch affected areas.
Remove contaminated clothing.
If irritation persists get medical attention.
Never use compressed air to remove fibers from the skin.
If fibers are seen penetrating from the skin, the fibers can be removed by applying and removing adhesive tape so that the fibers adhere to the tape and are pulled out of the skin.

Inhalation:
Move to fresh air.
If symptoms persist, call a physician.

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.
Rinse mouth with water and drink water to remove fibers from the throat.
If symptoms persist, call a physician.

Note to Physicians:
Treat symptomatically.

SECTION 5 : FIRE FIGHTING MEASURES

Flammable Properties: Non Flammable.

Flash Point: None.

Flash Point Method: Not applicable.

Lower Flammable/Explosive Limit: Not applicable.

Upper Flammable/Explosive Limit: Not applicable.

Extinguishing Media:
dry chemical
foam.
carbon dioxide (CO2).
water fog

Protective Equipment: Wear self-contained breathing apparatus (SCBA) and full fire fighting protective gear.

Unusual Fire Hazards: Hydrogen chloride to be released from the PVC barrier and vinyl facings during a fire.

Hazardous Combustion Byproducts:
Carbon monoxide.
Carbon dioxide.
Ammonia.
Other undetermined compounds could be released in small quantities.

Universal Fire And Explosion Hazards: Not available.

SECTION 6 : ACCIDENTAL RELEASE MEASURES

Personnel Precautions: Avoid contact with skin and eyes.

Environmental Precautions: Prevent further leakage or spillage if safe to do so.

Methods for containment:
This material will settle out of the air.
Prevent from spreading by covering, diking or other means.

Methods for cleanup:
Use an industrial vacuum cleaner with a high efficiency filter to clean up dust and fiber contamination.
Avoid dry sweeping.
Pick up and transfer to properly labeled containers.

Other Precautions: Does not apply.

SECTION 7 : HANDLING and STORAGE

Avoid dust formation

Hygiene Practices:	Wash hands before breaks and immediately after handling the product. Remove and wash contaminated clothing before re-use.

SECTION 8 : EXPOSURE CONTROLS, PERSONAL PROTECTION - EXPOSURE GUIDELINES

Engineering Controls:	Provide local exhaust and/or general ventilation to maintain exposure below regulatory and recommended limits. Dust collection system must be used in transferring operations, cutting or machining or other dust generating processes, such as using power tools. Vacuum or wet clean-up methods should be used.
Eye/Face Protection:	Safety glasses with side-shields.
Skin Protection Description:	Protective gloves. Long sleeved shirt and long pants.
Respiratory Protection:	When workers are facing airborne particulate/dust concentrations above the exposure limit they must use appropriate certified respirators. A properly fitted NIOSH approved disposable N 95 type dust respirator or better is recommended.
Other Protective:	When the temperature of the surface being insulated exceeds 250°F (121°C), including initial startup, the binder in these products may undergo various degrees of decomposition depending on the temperature in the application. The need for respiratory protection will vary according to the airborne concentration of the decomposition products released and accumulated in the area. Wear the appropriate respiratory protection according to the conditions and exposure levels in the area.
General Hygiene Considerations:	Wash hands before breaks and immediately after handling the product. Remove and wash contaminated clothing before re-use.

EXPOSURE GUIDELINES

Ingredient	Guideline OSHA	Guideline ACGIH	Ontario Canada	Mexico	
Fiber Glass (Wool)	None	TLV-TWA: 1 f/cc (Respirable)	TWAEV-TWA: 0.05 mg/m3 or 1 f/cc STEL: 0.6 mg/m3	TWA: 0.15 mg/m3	

SECTION 9 : PHYSICAL and CHEMICAL PROPERTIES

Physical State Appearance:	Fibrous.
Odor:	organic.
Boiling Point:	No Data
Melting Point:	No Data
Specific Gravity:	No Data
Solubility:	Insoluble. in water.
Vapor Density:	No Data
Vapor Pressure:	No Data
Evaporation Rate:	No Data
pH:	No Data
Viscosity:	Not applicable.
Flash Point:	None.
Flash Point Method:	Not applicable.

SECTION 10 : STABILITY and REACTIVITY

Chemical Stability:	Stable under normal conditions.
Hazardous Polymerization:	Hazardous polymerization does not occur.
Conditions to Avoid:	None expected
Incompatible Materials:	No materials to be especially mentioned.
Special Decomposition Products:	See Section 5 of MSDS for hazardous decomposition products during a fire.

SECTION 11 : TOXICOLOGICAL INFORMATION

Applies to Product :

Acute Toxicity:	Dusts may cause mechanical irritation to eyes and skin. Ingestion may cause transient irritation of throat. Inhalation may cause coughing, nose and throat irritation, and sneezing.

				Carcinogenicity to Humans.	carcinogenic.		
Cured Binder	No Data	No Data	No Data	No Data	No Data		No Data

Applies to Product :

Sensitization: No information available.

Mutagenicity: No information available.

Reproductive Toxicity: No information available.

Teratogenicity: No information available.

Neurological Effects: No information available.

Fiber Glass (Wool) :

Chronic Effects: In June 2011, The National Toxicology Program (NTP) removed biosoluble glass wool fibers from its list of possible carcinogens used for home and building insulation.
In October 2001, the International Agency for Research on Cancer (IARC) classified fiber glass wool as Group 3,"not classifiable as to its carcinogenicity to humans". The 2001 decision was based on human studies and animal research that have not shown an association between inhalation exposure to dust from fiber glass wool and the development of respiratory disease.

SECTION 12 : ECOLOGICAL INFORMATION

Applies to Product :

Ecotoxicity: This material is not expected to cause harm to animals, plants or fish.

Bioaccumulation: Not available.

Biodegradation: Not available.

Mobility In Environmental Media: Not available.

SECTION 13 : DISPOSAL CONSIDERATIONS

Applies to Product :

Waste Disposal: Dispose of in accordance with Local, State, Federal and Provincial regulations.

RCRA Number: No EPA Waste Numbers are applicable for this product's components.

SECTION 14 : TRANSPORT INFORMATION

Notes : This product is not regulated for shipping or transportation.

SECTION 15 : REGULATORY INFORMATION

Inventory Status

	Japan ENCS	EINECS Number	China	South Korea KECL	Australia AICS
Fiber Glass (Wool)	Not listed	266-046-0	Listed	KE-17630	Listed
Cured Binder	Not listed		Not listed	Not listed	Not listed

	Canada DSL	TSCA Inventory Status			
Fiber Glass (Wool)	Listed	Listed			
Cured Binder	Not listed	Not listed			

Applies to Product :

Canada WHMIS: Not controlled.

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

Section 311/312 Hazard Categories:

Acute Health Hazard:	Yes
Chronic Health Hazard:	No
Risk of ignition:	No
Sudden Release of Pressure Hazard:	No
Reactive Hazard:	No

Clean Air Act: This product does not contain any Hazardous Air Pollutants (HAPs).

State Right To Know

	RI	MN	IL	PA	MA
Fiber Glass (Wool)	Listed	Listed	Listed	Listed	Listed
Cured Binder	No Data	No Data	No Data	No Data	No Data

	NJ				
Fiber Glass (Wool)	No Data				
Cured Binder	No Data				

SECTION 16 : ADDITIONAL INFORMATION

MSDS Creation Date:	December 16, 1997
MSDS Revision Date:	January 14, 2013
MSDS Revision Notes:	Section 11 Updated with 2011 NTP Evaluation
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.

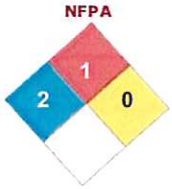
SAFETY DATA SHEET

Personal Protective Equipment		IATA Pictograms
		Not Regulated
Protective Gloves	Safety Glasses	

SECTION 1 : IDENTIFICATION

Product Name:	**Low Density Fiber Glass Insulation/Insulation Board - Unfaced Products**
SDS Manufacturer Number:	13614-SAM-EN
Synonyms:	Acoustical Backing Board, Advanced ThermaCube Plus®, Batts in Bags, Blended Blowing Wool, Cathedral Batt Insulation, Cavity Wall, Cold Storage Wall, Curtain Wall 225, FDM ARP100, FDM ARP125, Flexible Marine, Flexible Type 75 AF-FDM, HV-24, HV-26, H2V-1000, H2V-2000, Insulation Batts, Manufactured Housing Insulation, Masonry Wall Insulation, Metal Building (all types), Metal Framing Batts, Metal Framing Insulation, Multi-purpose Insulation, Noise Stop Board, Pink® Insulation, Pink Pak, QuietZone® Acoustic Batt, RA Series, Shaft Wall, Sill Sealer, Sonobatts®, Sound Attenuation Batts, Standard Blend, Super Pink R Blowing Wool, ThermaGlas®, Marine Board, Unfaced Duct Wrap, Warm-N-Dri®, Aislhogar, Aislacustic™, MBI, MBI Certified R, RW 4300 & RW 4600 Colchoneta, Termoaislante, AT 075, AT 075 PINK
Product Use/Restriction:	Insulation..
Manufacturer Name:	Owens Corning Insulating Systems, LLC
Address:	One Owens Corning Parkway Toledo, OH 43659
Customer Service Phone Number:	1-800-GET-PINK or 1-800-438-7465
Health Issues Information:	1-800-GET-PINK or 1-800-438-7465
Technical Product Information:	1-800-GET-PINK or 1-800-438-7465
Emergency Phone Number:	1-419-248-5330 (after 5pm ET and weekends)
CHEMTREC:	800-424-9300 (24 hours everyday).
Website:	www.owenscorning.com
SDS Creation Date:	December 16, 1997
SDS Revision Date:	June 03, 2014

NFPA



SECTION 2 : HAZARD(S) IDENTIFICATION

Applies to Product

Emergency Overview:	Exposure to dust may be irritating to eyes, nose, and throat.
Route of Exposure:	Eye contact Skin contact Inhalation
Potential Health Effects:	
Eye:	May cause slight irritation.
Skin:	May cause slight skin irritation.
Inhalation:	May cause irritation of respiratory tract.
Ingestion:	Ingestion of this product is unlikely.
Chronic Health Effects:	There is no known chronic health effect connected with long-term use or contact with this product.
Potential Environmental Effects:	There is no known ecological information for this material.
Aggravation of Pre-Existing Conditions:	Chronic respiratory or skin conditions may temporarily worsen from exposure to this product.

Fiber Glass (Wool)	65997-17-3	85 - 100 by weight
Cured Binder	N/A	0 - 15 by weight

Non-Hazardous Statement: The remaining components of this product are non-hazardous or are in a small enough quantity as to not meet regulatory thresholds for disclosure. These components contain no substances or impurities which would influence the classification of this product.

SECTION 4 : FIRST AID MEASURES

Eye Contact:
Immediately flush eyes with plenty of water for at least 15 to 20 minutes. Ensure adequate flushing of the eyes by separating the eyelids with fingers.
Do not rub or scratch eyes.
If eye irritation persists, consult a specialist.

Skin Contact:
Wash off immediately with soap and cold water.
DO NOT use warm water because this will open up the pores of the skin, which will cause further penetration of the fibers.
Use a wash cloth to help remove fibers.
DO NOT rub or scratch affected areas.
Remove contaminated clothing.
If irritation persists get medical attention.
Never use compressed air to remove fibers from the skin.
If fibers are seen penetrating from the skin, the fibers can be removed by applying and removing adhesive tape so that the fibers adhere to the tape and are pulled out of the skin.

Inhalation:
Move to fresh air.
If symptoms persist, call a physician.

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.
Rinse mouth with water and drink water to remove fibers from the throat.
If symptoms persist, call a physician.

Note to Physicians:
Treat symptomatically.

SECTION 5 : FIRE FIGHTING MEASURES

Flammable Properties: Non Flammable.

Flash Point: None.

Flash Point Method: Not applicable.

Lower Flammable/Explosive Limit: Not applicable.

Upper Flammable/Explosive Limit: Not applicable.

Extinguishing Media:
dry chemical
foam.
carbon dioxide (CO2).
water fog

Protective Equipment: Wear self-contained breathing apparatus (SCBA) and full fire fighting protective gear.

Unusual Fire Hazards: Hydrogen chloride to be released from the PVC barrier and vinyl facings during a fire.

Hazardous Combustion Byproducts:
Carbon monoxide.
Carbon dioxide.
Ammonia.
Other undetermined compounds could be released in small quantities.

Universal Fire And Explosion Hazards: Not available.

NFPA Ratings:

NFPA Health: 2

NFPA Flammability: 1

NFPA Reactivity: 0

SECTION 6 : ACCIDENTAL RELEASE MEASURES

Personnel Precautions: Avoid contact with skin and eyes.

Environmental Precautions: Prevent further leakage or spillage if safe to do so.

Methods for containment:
This material will settle out of the air.
Prevent from spreading by covering, diking or other means.

Methods for cleanup:
Use an industrial vacuum cleaner with a high efficiency filter to clean up dust and fiber contamination.
Avoid dry sweeping.
Pick up and transfer to properly labeled containers.

Other Precautions: Does not apply.

	Do not breathe dust. Wear personal protective equipment.
Storage:	Keep product in its packaging until use to minimize potential dust generation. Product should be kept dry and undercover.
Hygiene Practices:	Wash hands before breaks and immediately after handling the product. Remove and wash contaminated clothing before re-use.

SECTION 8 : EXPOSURE CONTROLS, PERSONAL PROTECTION - EXPOSURE GUIDELINES

Engineering Controls:	Provide local exhaust and/or general ventilation to maintain exposure below regulatory and recommended limits. Dust collection system must be used in transferring operations, cutting or machining or other dust generating processes, such as using power tools. Vacuum or wet clean-up methods should be used.
Eye/Face Protection:	Safety glasses with side-shields.
Skin Protection Description:	Protective gloves. Long sleeved shirt and long pants.
Respiratory Protection:	When workers are facing airborne particulate/dust concentrations above the exposure limit they must use appropriate certified respirators. A properly fitted NIOSH approved disposable N 95 type dust respirator or better is recommended.
Other Protective:	When the temperature of the surface being insulated exceeds 250°F (121°C), including initial startup, the binder in these products may undergo various degrees of decomposition depending on the temperature in the application. The need for respiratory protection will vary according to the airborne concentration of the decomposition products released and accumulated in the area. Wear the appropriate respiratory protection according to the conditions and exposure levels in the area.

EXPOSURE GUIDELINES

Ingredient	Guideline OSHA	Guideline ACGIH	Ontario Canada	Mexico	
Fiber Glass (Wool)	None	TLV-TWA: 1 f/cc (Respirable.)	TWAEV-TWA: 0.05 mg/m3 or 1 f/cc STEL: 0.6 mg/m3	TWA: 0.15 mg/m3	

SECTION 9 : PHYSICAL and CHEMICAL PROPERTIES

Physical State Appearance:	Fibrous.
Odor:	organic.
Boiling Point:	No Data
Melting Point:	No Data
Specific Gravity:	No Data
Solubility:	Insoluble. in water.
Vapor Density:	No Data
Vapor Pressure:	No Data
Evaporation Rate:	No Data
pH:	No Data
Viscosity:	Not applicable.
Flash Point:	None.
Flash Point Method:	Not applicable.

SECTION 10 : STABILITY and REACTIVITY

Chemical Stability:	Stable under normal conditions.
Hazardous Polymerization:	Hazardous polymerization does not occur.
Conditions to Avoid:	None expected
Incompatible Materials:	No materials to be especially mentioned.
Special Decomposition Products:	See Section 5 of MSDS for hazardous decomposition products during a fire.

SECTION 11 : TOXICOLOGICAL INFORMATION

Applies to Product :

Acute Toxicity:	Dusts may cause mechanical irritation to eyes and skin. Ingestion may cause transient irritation of throat, stomach and gastrointestinal tract. Inhalation may cause coughing, nose and throat irritation, and sneezing. High exposures may cause difficulty breathing, congestion, and chest tightness.

	Carcinogen			Classifiable as to its Carcinogenicity to Humans.			Carcinogen
Cured Binder	No Data			No Data			No Data

Applies to Product :

Sensitization: No information available.

Mutagenicity: No information available.

Reproductive Toxicity: No information available.

Teratogenicity: No information available.

Neurological Effects: No information available.

Fiber Glass (Wool) :

Chronic Effects: In June 2011, The National Toxicology Program (NTP) removed biosoluble glass wool fibers from its list of possible carcinogens used for home and building insulation.
In October 2001, the International Agency for Research on Cancer (IARC) classified fiber glass wool as Group 3,"not classifiable as to its carcinogenicity to humans". The 2001 decision was based on human studies and animal research that have not shown an association between inhalation exposure to dust from fiber glass wool and the development of respiratory disease.

SECTION 12 : ECOLOGICAL INFORMATION

Applies to Product :

Ecotoxicity: This material is not expected to cause harm to animals, plants or fish.

Bioaccumulation: Not available.

Biodegradation: Not available.

Mobility In Environmental Media: Not available.

SECTION 13 : DISPOSAL CONSIDERATIONS

Applies to Product :

Waste Disposal: Dispose of in accordance with Local, State, Federal and Provincial regulations.

SECTION 14 : TRANSPORT INFORMATION

IATA Shipping Name: Not Regulated.

MEX Shipping Name : Not Regulated.

SECTION 15 : REGULATORY INFORMATION

Inventory Status

	Japan ENCS	Philippines PICCS	China	South Korea KECL	Australia AICS
Fiber Glass (Wool)	Not listed	Listed	Listed	KE-17630	Listed
Cured Binder	Not listed		Listed	KE-35185	Listed

	TSCA Inventory Status				
Fiber Glass (Wool)	Listed				
Cured Binder	Listed				

SECTION 16 : ADDITIONAL INFORMATION

SDS Creation Date: December 16, 1997

SDS Revision Date: June 03, 2014

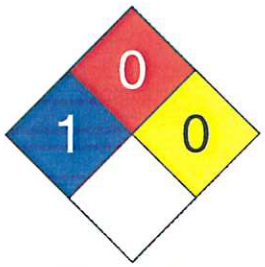
MSDS Revision Notes: Add product names AT 075 and AT 075 PINK

MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

Product Name	**Sodium Chloride Salt**
CAS #	7647-14-5
Product use	De-icer. General industrial and water softening/conditioning purposes.
Manufacturer	Sifto Canada Inc. A Compass Minerals Company 9900 West 109th Street, Suite 600 Overland Park, KS 66210 US Phone: 913-344-9200
CHEMTREC	1-800-424-9300
CANUTEC	1-800-996-6666

LEGEND HMIS/NFPA	
Severe	4
Serious	3
Moderate	2
Slight	1
Minimal	0



2. Hazards Identification

Emergency overview

CAUTION
EYE IRRITANT

Potential short term health effects

Routes of exposure	Eye, Skin contact, Inhalation, Ingestion.
Eyes	Causes irritation.
Skin	May cause irritation.
Inhalation	Dusts of this product may cause irritation of the nose, throat, and respiratory tract.
Ingestion	May cause stomach distress, nausea or vomiting.
Target organs	Eyes. Skin. Respiratory system.
Chronic effects	Prolonged or repeated exposure can cause drying, defatting and dermatitis.
Signs and symptoms	Symptoms may include redness, edema, drying, defatting and cracking of the skin. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

3. Composition / Information on Ingredients

Ingredient(s)	CAS #	Percent
Sodium chloride	7647-14-5	60 - 100

4. First Aid Measures

First aid procedures

Eye contact	Flush with cool water. Remove contact lenses, if applicable, and continue flushing. Obtain medical attention if irritation persists.
Skin contact	Brush away excess of dry material. Flush with water. Obtain medical attention if irritation persists.
Inhalation	If symptoms develop move victim to fresh air. If symptoms persist, obtain medical attention.
Ingestion	Do not induce vomiting. Rinse mouth with water, then drink one or two glasses of water. Obtain medical attention. Never give anything by mouth if victim is unconscious, or is convulsing.
Notes to physician	Symptoms may be delayed.

General advice	Avoid contact with eyes. Keep out of reach of children.

5. Fire Fighting Measures

Flammable properties	Not flammable by WHMIS/OSHA criteria. May be combustible at high temperatures.
Extinguishing media	
Suitable extinguishing media	Treat for surrounding material.
Unsuitable extinguishing media	Not available
Protection of firefighters	
Specific hazards arising from the chemical	Not available
Protective equipment for firefighters	Firefighters should wear full protective clothing including self contained breathing apparatus.
Hazardous combustion products	May include and are not limited to: Chlorine. Oxides of sodium.
Explosion data	
Sensitivity to mechanical impact	Not available
Sensitivity to static discharge	Not available

6. Accidental Release Measures

Personal precautions	Before attempting clean up, refer to hazard data given above. Use broom or dry vacuum to collect material for proper disposal without raising dust. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.
Methods for containment	None necessary.
Methods for cleaning up	Before attempting clean up, refer to hazard data given above. Use broom or dry vacuum to collect material for proper disposal without raising dust. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

7. Handling and Storage

Handling	Avoid breathing dusts from this material.
Storage	Keep out of reach of children. Keep containers tightly closed in a cool, well-ventilated place.

8. Exposure Controls / Personal Protection

Exposure limits

Ingredient(s)	Exposure Limits
Sodium chloride	**ACGIH-TLV** Not established **OSHA-PEL** Not established

Engineering controls

TWA PEL: No specific limits have been established for sodium chloride (a soluble substance). As a guideline, OSHA (United States) has established the following limits which are generally recognized for inert or nuisance dust. Particulates Not Otherwise Regulated (PNOR): 5mg/cu.m. Respirable Dust 8-Hour TWA PEL, 15mg/cu.m. Total Dust 8-Hour TWA PEL.

TWA TLV: No specific limits have been established for sodium chloride (a soluble substance). As a guideline, ACGIH (United States) has established the following limits which are generally recognized for inert or nuisance dust. Particulates (insolubles) Not Otherwise Classified (PNOC): 10mg/cu.m. Inhalable Particulate 8-Hours TWA TLV, 3mg/cu.m. Respirable Particulate TWA TLV.

Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. If user operations generate dust, fumes, or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal protective equipment

Eye / face protection	Safety glasses
Hand protection	Rubber gloves. Confirm with a reputable supplier first.
Skin and body protection	As required by employer code.
Respiratory protection	Where exposure guideline levels may be exceeded, use an approved NIOSH respirator or NIOSH-approved filtering facepiece.
General hygiene considerations	Handle in accordance with good industrial hygiene and safety practice. When using do not eat or drink. Wash hands before breaks and immediately after handling the product.

9. Physical & Chemical Properties

Appearance	Crystalline.
Color	White
Form	Crystals
Odor	Odorless
Odor threshold	Not available
Physical state	Solid
pH	6 - 8 (Neutral)
Melting point	800.9 °C (1473.62 °F)
Freezing point	Not available
Boiling point	1413 °C (2575.40 °F)
Flash point	Not available
Evaporation rate	Not available
Flammability limits in air, lower, % by volume	Not applicable
Flammability limits in air, upper, % by volume	Not applicable
Vapor pressure	0.1 kPa (1 mmHg) @ 865°C
Vapor density	Not applicable
Specific gravity	2.17 (H2O = 1)
Relative density	2.17 g/cm3
Octanol/water coefficient	Not available
Solubility (H2O)	36g/100g H2O @ 20°C
Auto-ignition temperature	Not available
Viscosity	Not applicable
Percent volatile	0 % w/w
Molecular weight	58.4400 g/mole
Molecular formula	NaCl

10. Chemical Stability & Reactivity Information

Chemical stability	Stable under recommended storage conditions.
Conditions to avoid	Do not mix with incompatible materials.
Incompatible materials	Reactive with oxidizing agents, acids, lithium, bromine trifluoride.
Hazardous decomposition products	May include and are not limited to: Chlorine. sodium oxides
Possibility of hazardous reactions	Hazardous polymerization does not occur.

11. Toxicological Information

Component analysis - LC50

Ingredient(s)	LC50
Sodium chloride	> 21000 mg/m3 rat

Component analysis - Oral LD50

Ingredient(s)	LD50
Sodium chloride	3000 mg/kg rat; 4000 mg/kg mouse

Effects of acute exposure

Eye	Causes irritation.
Skin	May cause irritation.
Inhalation	Dusts of this product may cause irritation of the nose, throat, and respiratory tract.
Ingestion	May cause stomach distress, nausea or vomiting.
Sensitization	Not classified or listed by IARC, NTP, OSHA and ACGIH.
Chronic effects	Not classified or listed by IARC, NTP, OSHA and ACGIH.
Carcinogenicity	Not classified or listed by IARC, NTP, OSHA and ACGIH.
Mutagenicity	Not classified or listed by IARC, NTP, OSHA and ACGIH.
Reproductive effects	Not classified or listed by IARC, NTP, OSHA and ACGIH.
Teratogenicity	Not classified or listed by IARC, NTP, OSHA and ACGIH.

12. Ecological Information

Ecotoxicity	Maybe harmful to freshwater aquatic species and to plants that are not saline tolerant.
Environmental effects	Not available
Aquatic toxicity	Not available
Persistence / degradability	Not available
Bioaccumulation / accumulation	Not available
Partition coefficient	Not available
Mobility in environmental media	Not available
Chemical fate information	Not available
Other adverse effects	Not available

13. Disposal Considerations

Waste codes	Not available
Disposal instructions	Waste must be disposed of in accordance with federal, state/provincial and local environmental control regulations.
Waste from residues / unused products	Not available
Contaminated packaging	Not available

14. Transport Information

U.S. Department of Transportation (DOT)

Not regulated as dangerous goods.

Transportation of Dangerous Goods (TDG - Canada)

Not regulated as dangerous goods.

15. Regulatory Information

Canadian federal regulations	This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.
US Federal regulations	This product is not known to be a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. All components are on the U.S. EPA TSCA Inventory List. CERCLA/SARA Hazardous Substances - Not applicable.

Occupational Safety and Health Administration (OSHA)

29 CFR 1910.1200 hazardous chemical	Yes

CERCLA (Superfund) reportable quantity

None

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories	Immediate Hazard - Yes Delayed Hazard - No Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No
Section 302 extremely hazardous substance	No
Section 311 hazardous chemical	Yes
Clean Air Act (CAA)	Not available
Clean Water Act (CWA)	Not available
Safe Drinking Water Act (SDWA)	Not available
Drug Enforcement Agency (DEA)	Not available
Food and Drug Administration (FDA)	Not available
WHMIS status	Controlled
WHMIS classification	Class D - Division 2B
WHMIS labeling	

State regulations	This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

Inventory name

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	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)

16. Other Information

Disclaimer	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	03-Sep-2008
Effective date	01-Sep-2008
Expiry date	01-Sep-2011
Prepared by	Dell Tech Laboratories Ltd. (519) 858-5021

MASTERS
NO LEAK™

SDS – SAFETY DATA SHEET

SECTION I: IDENTIFICATION

Product name: MASTERS® NO LEAK™
Product use: Pipe thread and gasket sealant

Supplier name and address:
G.F. THOMPSON CO. LTD.
620 Steven Court, Unit 11
Newmarket, Ontario
L3Y 6Z2

Manufacturer name and address:
Refer to supplier.

Emergency Tel:
Mon – Fri, 7:30 am to 5:00 pm EST
905-898-2557
800-499-3673 (toll free)
24 hr Emergency Tel:
905-252-6219 or 647-448-2050

SECTION II: HAZARDS IDENTIFICATION

Classification of the chemical

Light brown paste. Alcohol odour.

Most important hazards:
Flammable liquid and vapour. This material may be ignited by heat, sparks and direct flame.
May cause cancer. Causes damage to organs through prolonged or repeated exposure. Occupational exposure to the substance or mixture may cause adverse effects. For further information, please refer to section 11 of the SDS.

This material is classified as hazardous under Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015).
Classification:
- Flammable liquid - Category 3
- Carcinogenicity - Category 1
- Specific target organ toxicity, repeated exposure - Category 1

Label elements

Hazard pictogram(s)

Signal Word

DANGER!

Hazard statement(s)

Flammable liquid and vapour.
May cause cancer.
Causes damage to organs through prolonged or repeated exposure.

Precautionary statement(s)

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.
Keep container tightly closed.
Ground/Bond container and receiving equipment.
Use explosion-proof electrical and ventilating equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Do not breathe dust, fume or vapor.
Wash exposed skin thoroughly after handling.
Do not eat, drink or smoke when using this product.
Wear protective gloves/clothing and eye/face protection.

IF exposed or concerned: Get medical advice/attention.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
In case of fire: Use carbon dioxide, dry chemical or foam to extinguish.

Store in a well-ventilated place. Keep cool.
Store locked up.

Dispose of contents/container in accordance with local regulation.

Other hazards

Other hazards which do not result in classification:
Toxic fumes, gases or vapours may evolve on burning. May be mildly irritating to skin, eyes and respiratory system. May cause gastrointestinal irritation. In extremely high concentrations, may cause symptoms of central nervous system depression.

Environmental precautions:
Avoid release to the environment. See Section 12 for more environmental information.

SECTION III: COMPOSITION/INFORMATION ON INGREDIENTS

Mixture

Chemical name	Common name and synonyms	CAS #	Concentration (% by weight)
n-Butyl alcohol	n-Butanol 1-Hydroxybutane	71-36-3	**5.0**
Crystalline silica, quartz	Quartz silica Crystallized silicon dioxide	14808-60-7	**0.132**

SECTION IV: FIRST-AID MEASURES

Description of first aid measures

Ingestion : Rinse mouth. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. IF exposed or concerned: Get medical advice/attention.

Inhalation : If inhaled, move to fresh air. If breathing is difficult, give oxygen by qualified medical personnel only. If breathing is irregular or stopped, administer artificial respiration. IF exposed or concerned: Get medical advice/attention.

Skin contact : IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. IF exposed or concerned: Get medical advice/attention. Launder clothing before reuse.

Eye contact : Rinse immediately with plenty of water, also under the eyelids. IF exposed or concerned: Get medical advice/attention.

Most important symptoms and effects, both acute and delayed

: May cause cancer. Symptoms may include persistent coughing, shortness of breath, coughing up blood and wheezing.
Causes damage to organs through prolonged or repeated exposure. Inhalation of dust may cause shortness of breath, tightness of the chest, a sore throat and cough. Repeated or prolonged inhalation of fine dusts may cause severe scarring of the lungs, a disease called silicosis, and alveolar proteinosis (lower lung disease). Symptoms may include coughing, shortness of breath and eventually severe respiratory impairment.
May be mildly irritating to skin, eyes and respiratory system. Exposure may cause temporary irritation, redness or discomfort.
Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.
In extremely high concentrations, may also cause nausea, vomiting, dizziness, drowsiness and other symptoms of central nervous system depression.

Indication of any immediate medical attention and special treatment needed

: Provide general supportive measures and treat symptomatically.

SECTION V: FIRE-FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media

: Use water fog or fine spray, foams, carbon dioxide or dry chemical.

Unsuitable extinguishing media

: Do not use water jet, as this may spread burning material.

Special hazards arising from the substance or mixture / Conditions of flammability

: Flammable liquid and vapour. This material may be ignited by heat, sparks and direct flame. Closed containers may rupture if exposed to excess heat or flame due to a build-up of internal pressure. Toxic fumes, gases or vapours may evolve on burning.

Hazardous combustion products

: Carbon oxides; Aldehydes; Acids; unburned alcohols; Other unidentified organic compounds.

Special protective equipment and precautions for firefighters

Protective equipment for fire-fighters

: Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.
Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode.

Special fire-fighting procedures

: Move containers from fire area if safe to do so. Use water spray to cool unopened containers. Do not allow run-off from fire fighting to enter drains or water courses. Dike for water control.

SECTION VI: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

: All persons dealing with the clean-up should wear the appropriate personal protective equipment. Keep people away from and upwind of spill/leak. Restrict access to area until completion of clean-up. Refer to protective measures listed in sections 7 and 8.

Environmental precautions : Prevent product from entering drains, sewers, waterways and soil. If necessary, dike well ahead of the spill to prevent runoff into drains, sewers, or any natural waterway or drinking supply.

Methods and material for containment and cleaning up

: Ventilate the area. Prevent further leakage or spillage if safe to do so. Eliminate all ignition sources. Contain and absorb spilled liquid with non-combustible, inert absorbent material (e.g. sand). Pick up and transfer to properly labeled containers. Do not use combustible absorbents, such as sawdust. Contaminated absorbent material may pose the same hazards as the spilled product. Refer to Section 13 for disposal of contaminated material. Contact the proper local authorities.

SECTION VII: HANDLING AND STORAGE

Precautions for safe handling

: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.
Use with adequate ventilation. Wear suitable protective equipment during handling. Wear protective gloves/clothing and eye/face protection. Do not breathe dust, fume or vapor. Avoid contact with skin, eyes and clothing. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources - No smoking. Ground/Bond container and receiving equipment. Use explosion-proof electrical and ventilating equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Avoid contact with incompatible materials. Wash thoroughly after handling. Keep container tightly closed when not in use. Empty containers retain residue (liquid and/or vapour) and can be dangerous.

Conditions for safe storage : Store in a cool, well-ventilated area. Inspect periodically for damage or leaks. Store away from incompatible materials. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Store locked up.

Incompatible materials : Strong oxidizing agents; Strong acids; Strong bases

SECTION VIII: EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits:

Chemical Name	ACGIH TLV		OSHA PEL	
	TWA	STEL	PEL	STEL
n-Butyl alcohol	20 ppm	N/Av	100 ppm (300 mg/m³)	N/Av
Crystalline silica, quartz	0.025 mg/m³ (respirable)	N/Av	0.1 mg/m³ (respirable) (final rule limit)	N/Av

Exposure controls

Ventilation and engineering measures

: Use with adequate ventilation. Apply technical measures to comply with the occupational exposure limits. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. In case of insufficient ventilation wear suitable respiratory equipment.

Respiratory protection : If airbourne concentrations are above the permissible exposure limit or are not known, use NIOSH-approved respirators. Respirators should be selected based on the form and concentration of contaminants in air, and in accordance with CSA Z94.4-02. Advice should be sought from respiratory protection specialists.

Skin protection : Wear protective gloves/clothing. The suitability for a specific workplace should be discussed with the producers of the protective gloves. Wear resistant clothing and boots.

Eye / face protection : Wear eye/face protection. Wear as appropriate: Safety glasses with side shields; Tightly fitting safety goggles. A full face shield may also be necessary.

Other protective equipment : Ensure that eyewash stations and safety showers are close to the workstation location. Other equipment may be required depending on workplace standards.

General hygiene considerations

: Do not breathe dust, fume or vapor. Avoid contact with skin, eyes and clothing. Do not eat, drink or smoke when using this product. Wash hands and face before breaks and immediately after handling the product. Wash contaminated clothing before reuse. Handle in accordance with good industrial hygiene and safety practice.

SECTION IX: PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Light brown paste.

Odour : Alcohol odour.

Odour threshold : N/Av

pH : N/Av

Melting/Freezing point : 66 - 160°C (150 - 320°F) (emulsion range)

Initial boiling point and boiling range

: > 117.7°C (244°F) (based on ingredients)

Flash point : 47°C (116.6°F)

Flashpoint (Method) : closed cup

Evaporation rate (BuAe = 1) : N/Av

Flammability (solid, gas) : Not applicable.

Lower flammable limit (% by vol.)

: N/Av

Upper flammable limit (% by vol.)

: N/Av

Oxidizing properties : None known.

Explosive properties : Not explosive

Vapour pressure : N/Av

Vapour density : N/Av

Relative density / Specific gravity

: 1.6

Solubility in water : Insoluble.

Other solubility(ies) : N/Av

Partition coefficient: n-octanol/water or Coefficient of water/oil distribution

: N/Av

Auto-ignition temperature : N/Av

Decomposition temperature : N/Av

Viscosity : N/Av

Volatiles (% by weight) : 3.4%

Volatile organic Compounds (VOC's)

: 46.9 g/L

Absolute pressure of container

: N/Ap

Flame projection length : N/Ap

Other physical/chemical comments

: No additional information.

SECTION X: STABILITY AND REACTIVITY

Reactivity : Not normally reactive.

Chemical stability : Stable under normal conditions.

Possibility of hazardous reactions

: Hazardous polymerization does not occur.

Conditions to avoid : Do not use in areas without adequate ventilation. Avoid contact with incompatible materials. Avoid heat and open flame.

Incompatible materials : Strong oxidizing agents; Strong acids; Strong bases

Hazardous decomposition products

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

SECTION XI: TOXICOLOGICAL INFORMATION

Information on likely routes of exposure:

Routes of entry inhalation : YES

Routes of entry skin & eye : YES

Routes of entry Ingestion : YES

Routes of exposure skin absorption

: NO

Potential Health Effects:

Signs and symptoms of short-term (acute) exposure

Sign and symptoms Inhalation

: Mild respiratory irritant. May cause coughing and breathing difficulties. In extremely high concentrations, may also cause nausea, vomiting, dizziness, drowsiness and other symptoms of central nervous system depression.

Sign and symptoms ingestion

: Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Sign and symptoms skin : Direct skin contact may result in little or no irritation. Direct skin contact may cause temporary redness.

Sign and symptoms eyes : Direct eye contact may cause slight or mild, transient irritation. Direct eye contact may cause temporary redness.

Potential Chronic Health Effects

: Pneumoconiosis, or "dusty lung" disease, may result from chronic exposure to any dust. Repeated or prolonged inhalation of fine dusts may cause an increase in mucous production.

Mutagenicity : No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity : This material is classified as hazardous under Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015). Classification:
Carcinogenicity - Category 1. May cause cancer. Symptoms may include persistent coughing, shortness of breath, coughing up blood and wheezing.
Contains: Crystalline silica, quartz. Crystalline silica is classified as carcinogenic by IARC (Group 1), the ACGIH (Category A2) and the NTP (Group 1 - Known human carcinogen).

Reproductive effects & Teratogenicity

: This product is not expected to cause reproductive or developmental effects.

Sensitization to material : Not expected to be a skin or respiratory sensitizer.

Specific target organ effects : This material is classified as hazardous under Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015). Classification:
Specific target organ toxicity, repeated exposure - Category 1. Causes damage to organs through prolonged or repeated exposure.
Contains: Crystalline silica, quartz. If dusts are formed, prolonged inhalation may cause scarring of lung tissue, a disease called silicosis. Symptoms may include coughing, shortness of breath and eventually severe respiratory impairment.

Medical conditions aggravated by overexposure

: Pre-existing skin, eye, respiratory and central nervous system disorders.

Synergistic materials : None known or reported by the manufacturer.

Toxicological data : No data is available on the product itself. The calculated ATE values for this mixture are:
ATE oral = 15,800 mg/kg
ATE dermal = 68,040 mg/kg
ATE inhalation (vapours) = 486 mg/L/4H

See below for individual ingredient acute toxicity data.

	LC_{50} (4hr)	LD_{50}	
Chemical name	inh, rat	(Oral, rat)	(Rabbit, dermal)
n-Butyl alcohol	8000 ppm (24.3 mg/L) (vapour)	790 - 4360 mg/kg	3402 mg/kg
Crystalline silica, quartz	N/Av	N/Av	N/Av

Other important toxicological hazards

: None known or reported by the manufacturer.

SECTION XII: ECOLOGICAL INFORMATION

Refer to the supplier for Ecological Information.

SECTION XIII: DISPOSAL CONSIDERATIONS

Refer to the supplier for Disposal Considerations.

SECTION XIV: TRANSPORTATION INFORMATION

Refer to the supplier for Transportation Information.

SECTION XV: REGULATORY INFORMATION

Refer to the supplier for Regulatory Information.

SECTION XVI: OTHER INFORMATION

Prepared by: G. F. Thompson Co. Ltd
Telephone No.: 905-898-2557
Preparation date: **May 30, 2017**

MATERIAL SAFETY DATA SHEET

SECTION I - PRODUCT IDENTIFICATION

Product name: MASTERS PRO-DOPE
Product use: Thread sealing compound.

Supplier name and address:
G.F. THOMPSON CO. LTD.
620 Steven Court
Newmarket, Ontario
L3Y 6Z2

Manufacturer name and address:
Refer to supplier.

Emergency Tel:
Mon – Fri, 7:30 am to 5:00 pm EST
905-898-2557
800-499-3673 (toll free)
24 hr Emergency Tel:
905-252-6219 or 416-786-4336

WHMIS CLASS: B4, D1A, D2A, D2B

HMIS Rating:
* - Chronic hazard 0 - Minimal 1 – Slight 2 - Moderate 3 - Serious 4 – Severe

Health: *2 Flammability: 3 Reactivity: 0

SECTION II - INGREDIENTS

Ingredients	CAS#	wt.%	LC_{50} / 4 Hrs (Rat, ihl.)	LD_{50} mg/kg (Rat, oral)	LD_{50} mg/kg (Rabbit, dermal)
Castor oil	8001-79-4	15 - 40	N/Av	N/Av	N/Av
Ethylene glycol n-butyl ether	111-76-2	10 - 30	450 ppm	320 (rabbit)	400
Isopropyl alcohol	67-63-0	10 - 30	17,000 ppm	4720	12,890

SECTION III - PHYSICAL DATA

Physical state, odour and appearance: Solid paste. Slight alcohol odour.
Evaporation rate (n-Butyl acetate = 1): N/Av
Volatile, % by volume: 10
Solubility in water: Slightly soluble
pH: N/Av.
Vapour pressure (mmHg): N/Av
Coefficient of water/oil distribution: N/Av
VOC: 246 g/l, 17.29%

Freezing / melting point: N/Av
Odour threshold: N/Av
Specific gravity: 1.41
Boiling point: N/Av
Vapour density (Air = 1): N/Av
Viscosity: N/Av

SECTION IV - FIRE AND EXPLOSION DATA

Conditions of flammability: Flammable solid, due to organic solvent content. Product may be ignited by heat, sparks and flame.
Flash point (Method): 25°C / 77°F (Method not known)
Auto-ignition temperature: N/Av
Upper flammable limit %: N/Av
Lower flammable limit %: N/Av
Means of extinction: Dry chemical, foam, carbon dioxide and water fog. Do not use water jet, as this may spread burning material.
Sensitivity to mechanical impact/static discharge: N/Av.

Special fire fighting procedures: Firefighters should wear proper full protective equipment and self-contained breathing apparatus. Move containers from fire area if it can be done without risk. Water spray may only be useful in cooling equipment and containers exposed to heat and flame.
Unusual fire and explosion hazards: Closed containers may rupture if exposed to excess heat or flame due to a build-up of internal pressure.
Hazardous combustion products: Carbon oxides and other irritating fumes and smoke.

SECTION V - REACTIVITY DATA

Stability: Stable under the recommended storage and handling conditions prescribed. Hazardous polymerization will not occur.
Incompatible materials: Strong oxidizers (e.g. Chlorine, Peroxides, etc.).
Conditions of reactivity: Stable under ambient pressure and temperature. Avoid heat, sparks and flames.
Hazardous decomposition products: None known. Refer to Section IV for 'Hazardous combustion products'.

SECTION VI - TOXICOLOGICAL PROPERTIES

******Routes of exposure and acute effects******

Exposure limit: ACGIH-TLV: Ethylene glycol n-butyl ether – 20 ppm; Isopropyl alcohol – 200 ppm.
OSHA-PEL: Ethylene glycol n-butyl ether – 50 ppm (skin); Isopropyl alcohol – 400 ppm.
Routes of exposure: Skin contact, skin absorption, eye contact, inhalation and ingestion.
Irritancy of product: Moderate to severe.
Inhalation: Harmful if inhaled. Inhalation may cause nose, throat and respiratory tract irritation. Symptoms may include headache, nausea, vomiting, other central nervous system effects and blood system effects (red blood cell fragility and hemoglobinuria).
Skin: May cause moderate to severe irritation. Product could be absorbed if left on the skin and cause headache, nausea, vomiting, other central nervous system effects and blood system effects (red blood cell fragility and hemoglobinuria).
Eyes: May cause severe irritation.
Ingestion: Harmful if ingested. May cause irritation to the mouth, throat and stomach. Symptoms may include headache, nausea, vomiting, diarrhea, other central nervous system effects and possibly blood system effects (red blood cell fragility and hemoglobinuria).
Chronic effects: Prolonged or repeated skin contact may cause severe drying and cracking of the skin (dermatitis). Prolonged or repeated inhalation may cause severe toxicity to the blood system. At higher concentrations, prolonged inhalation may cause liver damage.
Carcinogenicity: Contains Ethylene glycol n-butyl ether. Ethylene glycol n-butyl ether is classified as a confimed animal carcinogen with unknown relevance to humans by ACGIH (Group A3). None of the listed ingredients are classified as carcinogenic by IARC.
Reproductive effects, Teratogenicity, Mutagenicity: Contains Isopropyl alcohol. Isopropyl alcohol may cause fetotoxic effects, based on animal data.
Sensitization to material: None known.
Synergistic materials: N/Av.
Conditions aggravated by exposure: Pre-existing skin, eye and respiratory disorders.

SECTION VII - FIRST AID

Inhalation: Immediately remove victim to fresh air. Obtain medical attention.
Skin contact: Immediately wash skin with mild soap and plenty of water, while removing contaminated clothing. Obtain medical attention immediately.
Eye contact: Immediately flush eyes thoroughly with water for at least fifteen minutes. Do not rub eyes. Obtain medical attention immediately.
Ingestion: Do not induce vomiting. Obtain medical attention immediately. Never give anything by mouth to an unconscious or convulsing person.

SECTION VIII - PREVENTIVE MEASURES

Spill, leak or release: Restrict access to area until completion of clean-up. Ensure clean-up is conducted by trained personnel only. All persons dealing with clean-up should wear the appropriate chemically resistant equipment. Eliminate all sources of heat and flame. Ventilate area of release. Stop leak if you can do so without risk. Scrape up into suitable containers, using method that does not generate sparks. Place any recovered material in closed, labelled containers for recycling or disposal (see below).Clean spill area. Keep out of waterways. Notify the appropriate authorities as required.
Waste disposal: Handle according to recommendations listed below. Dispose in accordance with all applicable government regulations.

SECTION VIII - PREVENTIVE MEASURES Continued

PROTECTIVE EQUIPMENT

Respiratory protection: None required under normal use. For prolonged exposure or if the TLV is exceeded, wear NIOSH-approved respirators.
Ventilation: Use in well ventilated area. General ventilation should be sufficient under normal use. Local exhaust ventilation may be necessary for prolonged exposures or if the product is being heated.
Protective gloves: Gloves impervious to the material, must be worn. Advice should be sought from glove suppliers.
Eye protection: Safety goggles, to prevent product from entering the eyes.
Other protective equipment: An eyewash station and safety shower should be made available in the immediate working area. Other equipment may be required according to workplace standards.

*** STORAGE & HANDLING ***

Storage and handling conditions:
Handling: Wear appropriate chemically protective equipment. Use in a well ventilated area. Avoid inhaling vapours or fumes. Avoid contact with skin, eyes, and clothing. Avoid and control operations that create dusty atmospheres. Keep away from heat, sparks and flame. Ground all equipment during handling. Keep away from incompatible materials. Keep container tightly closed when not in use. Wash thoroughly after handling.
Storage: Store in a cool, dry, well-ventilated area away from incompatibles (refer to Section V), heat and flame. No smoking in the area. Inspect periodically for damage or leaks.

Special Shipping Information - Transportation of Dangerous Goods Regulations (TDGR): Refer to the supplier for shipping information.

SECTION IX - PREPARATION INFORMATION

Prepared by: G. F. Thompson Co. Ltd
Telephone No.: 905-898-2557
Preparation date: September 30, 2015

Additional notes or references:
Legend: ACGIH: American Conference of Governmental Industrial Hygienists
CAS: Chemical Abstract Service
HMIS: Hazardous Materials Identification System
IARC: International Agency for Research on Cancer
N/Ap: Not Applicable
N/Av: Not Available
NIOSH: National Institute of Occupational Safety and Health
OSHA: Occupational Safety and Health Administration
PEL: Permissible Exposure Limit
RTECs: Registry of Toxic Effects of Chemical Substances
TLV: Threshold Limit Values
WHMIS: Workplace Hazardous Materials Information System

References: 1. ACGIH, Threshold Limit Values and Biological Exposure Indices for 2005.
2. International Agency for Research on Cancer Monographs, searched 2006.
3. Canadian Centre for Occupational Health and Safety, CCInfoWeb databases, 2006 (Chempendium and RTECs).
4. Material Safety Data Sheet from manufacturer.

Monarch Oil
INDUSTRIAL - AUTOMOTIVE - COMMERCIAL
2216 Shirley Drive, Kitchener, ON N2B 3Y1
Tel: 519-743-8241 1-800-268-6457

Safety Data Sheet
SteelKut 109

AP109

1. IDENTIFICATION

Product Name: SteelKut 109
Product Number: STEELKUT109
Recommended Use: Metal Working Fluid

Company Identification
Reliance Fluid Technologies, LLC
3943 Buffalo Ave.
Niagara Falls, New York, 14303
1-716-332-0988 (For product information)

Emergency Number:
1-800-424-9300 or 1-703-527-3887 (CHEMTREC)

Hazard Rating	
	HMIS
Health:	0
Flammability:	1
Reactivity:	0
Personal Protection:	B

2. HAZARDS IDENTIFICATION

OSHA/HCS STATUS:
This material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

CLASSIFICATION(S):
Not Classified

SIGNAL WORD:
No Signal Word.

SYMBOL(S):
None

HAZARD STATEMENT(S):
No known significant effects or critical hazards.

PRECAUTIONARY STATEMENT(S):

GENERAL PRECAUTIONARY STATEMENT(S):
Keep out of reach of children.
Read label before use.
If medical advice is needed, have product container or label at hand.

PREVENTION PRECAUTIONARY STATEMENT(S):
Not applicable.

RESPONSE PRECAUTIONARY STATEMENT(S):
Not applicable.

STORAGE PRECAUTIONARY STATEMENT(S):
Store in a dry place.
Store in a closed container.

DISPOSAL PRECAUTIONARY STATEMENT(S):
Dispose of contents/containers should be cleaned of residual product before disposal,and disposed of in accordance with all applicable laws and regulations.

OTHER HAZARDS WHICH DO NOT RESULT IN CLASSIFICATION:
No additional information available

3. COMPOSITION/INFORMATION ON INGREDIENTS

COMPONENT LISTING:

Chemical Name	Amount	CAS Number
Hydrotreated Petroleum Oil	0 - 95%	Various
Proprietary Ingredients	5 - 15%	Proprietary

There are no ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health and hence require reporting in this section.

4. FIRST AID MEASURES

EYE CONTACT FIRST AID:

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

SKIN CONTACT FIRST AID:

Wash skin with plenty of soap and water while removing contaminated clothing and shoes.

INHALATION FIRST AID:

IF INHALED: Remove victim to fresh air and Keep at rest in a position Comfortable for breathing.

INGESTION FIRST AID:

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

NOTES TO PHYSICIAN:

Treat Symptomatically.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES
Flash Point (Typical) Method: 173 °C (344 °F)
Autoignition Temperature: N/A

NFPA FLAMMABILITY CLASSIFICATION:
NFPA Class-IIIB combustible material

FLAMMABLE LIMITS IN AIR
LEL: N/A
UEL: N/A

EXTINGUISHING MEDIA:
Carbon dioxide, water fog, foam, or dry powder. Do not use water, because this product is oil based. Water or foam may cause frothing.

FIRE & EXPLOSION HAZARDS:
Can burn in fire, releasing toxic vapors, fumes, and smoke.

FIRE FIGHTING INSTRUCTIONS:
As in any fire, wear self-contained breathing apparatus pressure-demand MSHA/NIOSH (approved or equivalent) and full protective gear.

COMBUSTION PRODUCTS:
Hazardous decomposition products are oxides of carbon and nitrogen including CO and CO2.

6. ACCIDENTAL RELEASE MEASURES

SAFEGUARDS (PERSONNEL):
Eliminate all sources of ignition - heat, sparks, flame, electricity, impact and friction.

INITIAL CONTAINMENT:
Absorb spills with inert material. Do not allow material to enter soil or surface water.

LARGE SPILLS PROCEDURE:
Absorb spill with inert material (e g, dry sand or earth), then place in a chemical waste container. Do not flush to sewer.

SMALL SPILLS PROCEDURE:
Absorb spills with inert material.

MISCELLANEOUS:
Treat or dispose of in accordance with all federal, state, and local requirements. Incineration is preferred.

7. HANDLING AND STORAGE

HANDLING (PERSONNEL):
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.

Empty drums should be completely drained, properly bunged, and promptly returned to a drum reconditioner, or properly disposed of. Wash hands thoroughly after handling.

HANDLING (PHYSICAL ASPECTS):
Secure container after each use. Store in a cool dry area.

Avoid contact with strong oxidizing agents.

STORAGE PRECAUTIONS:
Store in a cool dry place, in a tightly closed container. Eliminate all sources of ignition - heat, sparks, flame, electricity, impact and friction.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

OCCUPATIONAL EXPOSURE LIMITS

Material	Source	Type	mg/m3
Oil Mist, Mineral	ACGIH	TWA (Inhalable fraction.)	5 mg/m3
Oil Mist, Mineral	ACGIH	STEL(Mist.)	10 mg/m3
Oil Mist, Mineral	OSHA	TWA (Mist.)	5 mg/m3

ENGINEERING CONTROLS:
Local exhaust ventilation may be necessary to control any air contaminants to within their TLVs during the use of this product. TLV for mineral oil is 5 mg/cubic meter.

EYE / FACE PROTECTION REQUIREMENTS:
When splashing of the material may occur, chemical goggles and/or a face shield are recommended.

SKIN PROTECTION REQUIREMENTS:
Where contact is likely, wear chemical resistant gloves.

RESPIRATORY PROTECTION REQUIREMENTS:
Under normal use conditions, with adequate ventilation, no special handling equipment is required. If mists are produced, local ventilation may be required to keep exposure below limits.

GENERAL COMMENTS:
Always observe good personal hygiene practices. Wash hands and other exposed skin areas with plenty of mild soap and water before eating, drinking, smoking, etc...

9. PHYSICAL AND CHEMICAL PROPERTIES

FORM	Liquid
ODOR	Petroleum
VAPOR PRESSURE	Less than 0.1 mm Hg at 68°F (20°C)
VAPOR DENSITY	Heavier than air (Air = 1)
AUTOIGNITION TEMPERATURE	Not Available
SPECIFIC GRAVITY	.9800 Approximately
DENSITY	7.33/lb Approximately
MELTING PT.	Not Determined
VISCOSITY	46.0 cSt at 40 °C
FLASH PT.	344 °F

10. STABILITY AND REACTIVITY

STABILITY: Material is stable under normal conditions.

POLYMERIZATION: Hazardous polymerization will not occur.

INCOMPATIBILITY WITH OTHER MATERIALS: Avoid contact with strong oxidizing agents.

DECOMPOSITION: In the case of a fire, oxides of carbon, hydrocarbons, fumes, and smoke may be produced.

CONDITIONS TO AVOID: Excessive heat. Avoid all sources of ignition.

11. TOXICOLOGICAL INFORMATION

GENERAL INFORMATION:
Based on data on the components and the toxicology of similar materials

ROUTES OF ENTRY:
Skin, Eyes, Ingestion, and Inhalation.

ACUTE EXPOSURE:

EYE IRRATATION:
Not expected to cause eye irritation. Based on data from components or similar materials.
Vapors may cause irritation.

SKIN IRRATATION:
Slightly irritating based on data from components or similar materials.
Prolonged or repeated skin contact without proper hygiene may result in skin disorders such as acne.

RESPIRATORY IRRITATION:
Based on data from components and similar materials, Inhalation of vapors or mists may cause irritation.

DERMAL TOXICITY:
Expected to be of low toxicity: LD50 > 5000 mg/kg, Rabbit

ORAL TOXICITY:
Expected to be of low toxicity: LD50 > 5000 mg/kg , Rat

INHALATION TOXICITY:
Based on data from components and similar materials, product is not considered t be an inhalation hazard under normal conditions of use.

SENSITISATION:
Component concentrations in this formulation would not be expected to cause skin sensitization, based on tests of the components or similar formulations.

CHRONIC EXPOSURE:

CHRONIC TOXICITY:
No data available to indicate product or components present at greater than 1% are chronic health hazards.

CARCINOGENICITY:
Product contains mineral and/or synthetic oils shown to be noncarcinogenic in laboratory studies with the same or similar materials. Mineral and synthetic oil are not classified as carcinogenic by the International Agency for Research on Cancer (IARC). Other components are not known to be associated with carcinogenic effects.

MUTAGENICITY:
No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

REPRODUCTIVE TOXICITY:
No data available to indicate either product or components present at greater than 0.1% that may cause reproductive toxicity.

TERATOGENCITY:
No data available to indicate either product or components present at greater than0.1% that may cause birth defects.

ADDITIONAL INFORMATION:
No other health hazards known.

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL HAZARDS:
Ecological Toxicity data has not been determined specifically for this product. The ecological toxicity hazard is based on an evaluation of data for the components or a similar material. This material is expected to be harmful to aquatic organisms and may cause long-term adverse effects in the aquatic environment.

ENVIRONMENTAL FATE
This 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. This product contains components which may be persistent in The environment.

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL:
Avoid disposal into waste water treatment facilities. Treat or dispose of waste material in accordance with all local, state/provincial, and national requirements. This product, if discarded, is not considered a hazardous waste.

14. TRANSPORTATION INFORMATION

PRODUCT LABEL .....: SteelKut 109

D.O.T SHIPPING .....: Not Regulated by DOT.

IMDG: This material is not classified as dangerous under IMDG regulations.

IATA: This material is not classified as dangerous under IATA regulations.

TRANSPORT CANADA: This material is not classified as dangerous under Transport Canada regulations.

15. REGULATORY INFORMATION

OSHA Hazard Communication Standard:
The classification of this material is based on OSHA HCS 2012 criteria.

United States inventory (TSCA):	All components are listed or exempted.
Canada inventory:	All components are listed or exempted.
Europe inventory:	All components are listed or exempted.
Japan inventory (ENCS):	All components are listed or exempted.
Australia inventory (AICS):	All components are listed or exempted.
Korea inventory (KECI):	All components are listed or exempted.
China inventory (IECSC):	All components are listed or exempted.
Philippines inventory (PICCS):	All components are listed or exempted.

16. OTHER INFORMATION

REASON FOR ISSUE ....: New
APPROVAL DATE ..... : February 23, 2018
SUPERCEDES DATE .....: New
RTN NUMBER ... .: STEELKUT109

****
This information is furnished in this Safety Data Sheet is without warranty, expressed or implied, except that it is accurate to the best of our knowledge, information and belief as of the date issued. Since the information provided may be applied under conditions beyond our control, Superior Lubricants Company, Inc. does not assume any responsibility for the results of its use. No responsibility is assumed for any harm or damage resulting from abnormal use of this product. It is the responsibility of the user to ensure that the product is suitable for its intended use. The data on this sheet are related only to the specific material designated herein.
****

SAFETY DATA SHEET

SECTION 1 IDENTIFICATION

PRODUCT

Product Name: **MOBIL HYDRAUL 56**
Product Description: Base Oil and Additives
SDS Number: 20777
Product Code: 20152050B510
Intended Use: Hydraulic/transmission fluid

COMPANY IDENTIFICATION

Supplier: **Imperial Oil Downstream**
P.O. Box 2480, Station M
Calgary, ALBERTA T2P 3M9 Canada

24 Hour Emergency Telephone	1-866-232-9563
Transportation Emergency Phone Number	1-866-232-9563
Product Technical Information	1-800-268-3183
Supplier General Contact	1-800-567-3776

SECTION 2 HAZARD IDENTIFICATION

This material is considered to be NON-HAZARDOUS according to regulatory guidelines.

This product has been classified in accordance with hazard criteria of the Hazardous Products Regulations (HPR) SOR/2015-17 and the SDS contains all the information required by the HPR SOR/2015-17.

Other hazard information:

Health Hazards Not Otherwise Classified: None as defined under HPR SOR/2015-17.

Physical Hazards Not Otherwise Classified: None as defined under HPR SOR/2015-17.

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.

Substance(s) or Complex Substance(s)

Name	CAS#	Concentration*	GHS Hazard Codes
BORATE ESTER	CONFIDENTIAL	0.1 - < 1%	H317
HYDROTREATED MIDDLE DISTILLATE (PETROLEUM)	64742-46-7	1 - < 5%	H304
SEVERELY HYDROTREATED HEAVY PARAFFINIC DISTILLATE	64742-54-7	20 - < 30%	H304
SOLVENT DEWAXED HEAVY PARAFFINIC DISTILLATE	64742-65-0	20 - < 30%	H304
ZINC ALKYLDITHIOPHOSPHATE	68649-42-3	1 - 2.5%	H318, H401, H411

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

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 run-off from fire control or dilution from entering streams, sewers or drinking water supply. Fire-fighters 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: Pressurised mists may form a flammable mixture.

Hazardous Combustion Products: Aldehydes, Incomplete combustion products, Oxides of carbon, Smoke, Fume, Sulphur oxides

FLAMMABILITY PROPERTIES

Flash Point [Method]: >198°C (388°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.

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 so without risk. Recover by pumping or with suitable absorbent.

Water Spill: Stop leak if you can do so 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: Dyke 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 earthing procedures. However, bonding and earthing 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

Substance Name	Form	Limit/Standard			Note	Source
HYDROTREATED MIDDLE DISTILLATE (PETROLEUM)	Inhalable fraction.	TWA	5 mg/m3			ACGIH
SEVERELY HYDROTREATED HEAVY PARAFFINIC DISTILLATE	Mist.	TWA	5 mg/m3			ACGIH
SOLVENT DEWAXED HEAVY PARAFFINIC DISTILLATE	Mist.	TWA	5 mg/m3			ACGIH

Exposure limits/standards for materials that can be formed when handling this product: When mists/aerosols can occur the following is recommended: 5 mg/m^3 - ACGIH TLV (inhalable fraction).

NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

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/vapour 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. Practise 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
Colour: Brown
Odour: Characteristic
Odour Threshold: N/D

IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

Relative Density (at 15 °C): 0.884
Flammability (Solid, Gas): N/A
Flash Point [Method]: >198°C (388°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
Vapour Density (Air = 1): > 2 at 101 kPa
Vapour 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 | 9.6 cSt (9.6 mm2/sec) at 100°C
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

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	Minimally Toxic. Based on assessment of the components.

material.	
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.
Sensitisation	
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 sensitising in test animals.

CMR Status: None.

Chemical Name	CAS Number	List Citations
HYDROTREATED MIDDLE DISTILLATE (PETROLEUM)	64742-46-7	4

--REGULATORY LISTS SEARCHED--

1 = IARC 1	3 = IARC 2B	5 = ACGIH A1
2 = IARC 2A	4 = ACGIH ALL	6 = ACGIH A2

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. Protect the environment. Dispose of used oil at designated sites. Minimize skin contact. Do not mix used oils with solvents, brake fluids or coolants.

REGULATORY DISPOSAL INFORMATION

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 (TDG): Not Regulated for Land Transport

LAND (DOT): 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

CEPA: All components of this product are either on the Domestic Substance List (DSL) or are exempt.

Listed or exempt from listing/notification on the following chemical inventories (May contain substance(s) subject to notification to the EPA Active TSCA inventory prior to import to USA): AICS, DSL, ENCS, KECI, PICCS, TCSI, TSCA

The Following Ingredients are Cited on the Lists Below:

Chemical Name	CAS Number	List Citations
ZINC ALKYLDITHIOPHOSPHATE	68649-42-3	6

--REGULATORY LISTS SEARCHED--

1 = TSCA 4
2 = TSCA 5a2
3 = TSCA 5e
4 = TSCA 6
5 = TSCA 12b
6 = NPRI

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:
Updates made in accordance with implementation of GHS requirements.

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DGN: 7105047 (546449)

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Quaker State High Mileage 10W-30 Motor Oil (SN/GF-5)

Version	Revision Date:	SDS Number:	Print Date: 10/16/2018
1.1	10/12/2018	800010026262	Date of last issue: 01/19/2016

SECTION 1. IDENTIFICATION

Product name : Quaker State High Mileage 10W-30 Motor Oil (SN/GF-5)

Product code : 001F9806

Manufacturer or supplier's details

Manufacturer/Supplier : **Shell Oil Products US**
PO Box 4427
Houston TX 77210-4427
USA

SDS Request : (+1) 877-276-7285

Customer Service :

Emergency telephone number

Spill Information : 877-504-9351

Health Information : 877-242-7400

Recommended use of the chemical and restrictions on use

Recommended use : Engine oil.

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with 29 CFR 1910.1200

Based on available data this substance / mixture does not meet the classification criteria.

GHS label elements

Hazard pictograms : No Hazard Symbol required

Signal word : No signal word

Hazard statements : PHYSICAL HAZARDS:
Not classified as a physical hazard under GHS criteria.
HEALTH HAZARDS:
Not classified as a health hazard under GHS criteria.
ENVIRONMENTAL HAZARDS:
Not classified as an environmental hazard under GHS criteria.

Precautionary statements :

Prevention:

No precautionary phrases.

Response:

No precautionary phrases.

Storage:

No precautionary phrases.

Disposal:
No precautionary phrases.

Other hazards which do not result in classification
Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.
Used oil may contain harmful impurities.
Not classified as flammable but will burn.
The classification of this material is based on OSHA HCS 2012 criteria.
Under normal conditions of use or in a foreseeable emergency, this product does not meet the definition of a hazardous chemical when evaluated according to the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature : Synthetic base oil and additives.
Highly refined mineral oil.
The highly refined mineral oil contains <3% (w/w) DMSO-extract, according to IP346.

* contains one or more of the following CAS-numbers: 64742-53-6, 64742-54-7, 64742-55-8, 64742-56-9, 64742-65-0, 68037-01-4, 72623-86-0, 72623-87-1, 8042-47-5, 848301-69-9.

Hazardous components

Chemical name	Synonyms	CAS-No.	Concentration (% w/w)
Polyolefin polyamine succinimide polyol **		Not Assigned	1 - 3
Alkaryl amine	bis(nonylphenyl)amine	36878-20-3	1 - 3
Interchangeable low viscosity base oil (<20,5 cSt @40°C) *		Not Assigned	0 - 90

** polymer exempt.

SECTION 4. FIRST-AID MEASURES

If inhaled : No treatment necessary under normal conditions of use.
If symptoms persist, obtain medical advice.

In case of skin contact : Remove contaminated clothing. Flush exposed area with water and follow by washing with soap if available.
If persistent irritation occurs, obtain medical attention.

In case of eye contact : Flush eye with copious quantities of water.

		rinsing. If persistent irritation occurs, obtain medical attention.
If swallowed	:	In general no treatment is necessary unless large quantities are swallowed, however, get medical advice.
Most important symptoms and effects, both acute and delayed	:	Oil acne/folliculitis signs and symptoms may include formation of black pustules and spots on the skin of exposed areas. Ingestion may result in nausea, vomiting and/or diarrhoea.
Protection of first-aiders	:	When administering first aid, ensure that you are wearing the appropriate personal protective equipment according to the incident, injury and surroundings.
Indication of any immediate medical attention and special treatment needed	:	Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	:	Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.
Unsuitable extinguishing media	:	Do not use water in a jet.
Specific hazards during fire-fighting	:	Hazardous combustion products may include: A complex mixture of airborne solid and liquid particulates and gases (smoke). Carbon monoxide may be evolved if incomplete combustion occurs. Unidentified organic and inorganic compounds.
Specific extinguishing methods	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Special protective equipment for firefighters	:	Proper protective equipment including chemical resistant gloves are to be worn; chemical resistant suit is indicated if large contact with spilled product is expected. Self-Contained Breathing Apparatus must be worn when approaching a fire in a confined space. Select fire fighter's clothing approved to relevant Standards (e.g. Europe: EN469).

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Avoid contact with skin and eyes.

Environmental precautions	:	Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers. Local authorities should be advised if significant spillages cannot be contained.
Methods and materials for containment and cleaning up	:	Slippery when spilt. Avoid accidents, clean up immediately. Prevent from spreading by making a barrier with sand, earth or other containment material. Reclaim liquid directly or in an absorbent. Soak up residue with an absorbent such as clay, sand or other suitable material and dispose of properly.
Additional advice	:	For guidance on selection of personal protective equipment see Chapter 8 of this Safety Data Sheet. For guidance on disposal of spilled material see Chapter 13 of this Safety Data Sheet.

SECTION 7. HANDLING AND STORAGE

Technical measures	:	Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols. Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material.
Advice on safe handling	:	Avoid prolonged or repeated contact with skin. Avoid inhaling vapour and/or mists. When handling product in drums, safety footwear should be worn and proper handling equipment should be used. Properly dispose of any contaminated rags or cleaning materials in order to prevent fires.
Avoidance of contact	:	Strong oxidising agents.
Product Transfer	:	Proper grounding and bonding procedures should be used during all bulk transfer operations to avoid static accumulation.
Further information on storage stability	:	Keep container tightly closed and in a cool, well-ventilated place. Use properly labeled and closable containers. Store at ambient temperature.

Packaging material	:	Suitable material: For containers or container linings, use mild steel or high density polyethylene. Unsuitable material: PVC.
Container Advice	:	Polyethylene containers should not be exposed to high temperatures because of possible risk of distortion.

SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Oil mist, mineral	Not Assigned	TWA (Mist)	5 mg/m3	OSHA Z-1
Oil mist, mineral		TWA (Inhalable fraction)	5 mg/m3	ACGIH

Biological occupational exposure limits

No biological limit allocated.

Monitoring Methods

Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure controls. For some substances biological monitoring may also be appropriate.
Validated exposure measurement methods should be applied by a competent person and samples analysed by an accredited laboratory.
Examples of sources of recommended exposure measurement methods are given below or contact the supplier. Further national methods may be available.
National Institute of Occupational Safety and Health (NIOSH), USA: Manual of Analytical Methods http://www.cdc.gov/niosh/
Occupational Safety and Health Administration (OSHA), USA: Sampling and Analytical Methods http://www.osha.gov/
Health and Safety Executive (HSE), UK: Methods for the Determination of Hazardous Substances http://www.hse.gov.uk/
Institut für Arbeitsschutz Deutschen Gesetzlichen Unfallversicherung (IFA) , Germany http://www.dguv.de/inhalt/index.jsp
L'Institut National de Recherche et de Securité, (INRS), France http://www.inrs.fr/accueil

Engineering measures : The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include:
Adequate ventilation to control airborne concentrations.

Where material is heated, sprayed or mist formed, there is greater potential for airborne concentrations to be generated.

General Information:

Define procedures for safe handling and maintenance of controls.
Educate and train workers in the hazards and control measures relevant to normal activities associated with this product.
Ensure appropriate selection, testing and maintenance of equipment used to control exposure, e.g. personal protective equipment, local exhaust ventilation.
Drain down system prior to equipment break-in or maintenance.
Retain drain downs in sealed storage pending disposal or subsequent recycle.
Always observe good personal hygiene measures, such as washing hands 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.

Personal protective equipment

Respiratory protection : No respiratory protection is ordinarily required under normal conditions of use.
In accordance with good industrial hygiene practices, precautions should be taken to avoid breathing of material.
If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation.
Check with respiratory protective equipment suppliers.
Where air-filtering respirators are suitable, select an appropriate combination of mask and filter.
Select a filter suitable for the combination of organic gases and vapours [Type A/Type P boiling point >65°C (149°F)].

Hand protection
Remarks : Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection. PVC, neoprene or nitrile rubber gloves Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced.
Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended.
For continuous contact we recommend gloves with breakthrough time of more than 240 minutes with preference for > 480 minutes where suitable gloves can be identified. For

recognize that suitable gloves offering this level of protection may not be available and in this case a lower breakthrough time maybe acceptable so long as appropriate maintenance and replacement regimes are followed. Glove thickness is not a good predictor of glove resistance to a chemical as it is dependent on the exact composition of the glove material. Glove thickness should be typically greater than 0.35 mm depending on the glove make and model.

Eye protection : If material is handled such that it could be splashed into eyes, protective eyewear is recommended.

Skin and body protection : Skin protection is not ordinarily required beyond standard work clothes.
It is good practice to wear chemical resistant gloves.

Protective measures : Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.

Thermal hazards : Not applicable

Environmental exposure controls

General advice : Take appropriate measures to fulfill the requirements of relevant environmental protection legislation. Avoid contamination of the environment by following advice given in Chapter 6. If necessary, prevent undissolved material from being discharged to waste water. Waste water should be treated in a municipal or industrial waste water treatment plant before discharge to surface water.
Local guidelines on emission limits for volatile substances must be observed for the discharge of exhaust air containing vapour.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	liquid
Colour	:	amber
Odour	:	Slight hydrocarbon
Odour Threshold	:	Data not available
pH	:	Not applicable
pour point	:	-48 °C / -54 °F Method: ASTM D97
Initial boiling point and boiling range	:	> 280 °C / 536 °F estimated value(s)

Flash point	:	218 °C / 424 °F Method: ASTM D93 (PMCC)
Evaporation rate	:	Data not available
Flammability (solid, gas)	:	Data not available
Upper explosion limit / upper flammability limit	:	Typical 10 %(V)
Lower explosion limit / Lower flammability limit	:	Typical 1 %(V)
Vapour pressure	:	< 0.5 Pa (20 °C / 68 °F) estimated value(s)
Relative vapour density	:	> 1 estimated value(s)
Relative density	:	0.8657 (15.0 °C / 59.0 °F)
Density	:	865.7 kg/m3 (15.0 °C / 59.0 °F) Method: ASTM D4052
Solubility(ies)		
Water solubility	:	negligible
Solubility in other solvents	:	Data not available
Partition coefficient: n-octanol/water	:	log Pow: > 6 (based on information on similar products)
Auto-ignition temperature	:	> 320 °C / 608 °F
Decomposition temperature	:	Data not available
Viscosity		
Viscosity, dynamic	:	Data not available
Viscosity, kinematic	:	10.89 mm2/s (100 °C / 212 °F) Method: ASTM D445 72.2 mm2/s (40.0 °C / 104.0 °F) Method: ASTM D445
Explosive properties	:	Not classified

Oxidizing properties	:	Data not available
Conductivity	:	This material is not expected to be a static accumulator.

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	The product does not pose any further reactivity hazards in addition to those listed in the following sub-paragraph.
Chemical stability	:	Stable.
Possibility of hazardous reactions	:	Reacts with strong oxidising agents.
Conditions to avoid	:	Extremes of temperature and direct sunlight.
Incompatible materials	:	Strong oxidising agents.
Hazardous decomposition products	:	No decomposition if stored and applied as directed.

SECTION 11. TOXICOLOGICAL INFORMATION

Basis for assessment	:	Information given is based on data on the components and the toxicology of similar products.Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).

Information on likely routes of exposure
Skin and eye contact are the primary routes of exposure although exposure may occur following accidental ingestion.

Acute toxicity

Product:

Acute oral toxicity	:	LD50 (rat): > 5,000 mg/kg Remarks: Low toxicity: Based on available data, the classification criteria are not met.
Acute inhalation toxicity	:	Remarks: Based on available data, the classification criteria are not met.
Acute dermal toxicity	:	LD50 (Rabbit): > 5,000 mg/kg Remarks: Low toxicity: Based on available data, the classification criteria are not met.

Skin corrosion/irritation

Product:
Remarks: Slightly irritating to skin., Prolonged or repeated skin contact without proper cleaning

ble data, the classification criteria are not met.

Serious eye damage/eye irritation

Product:
Remarks: Slightly irritating to the eye., Based on available data, the classification criteria are not met.

Respiratory or skin sensitisation

Product:
Remarks: Not a skin sensitiser.
Based on available data, the classification criteria are not met.

Germ cell mutagenicity

Product:

: Remarks: Non mutagenic, Based on available data, the classification criteria are not met.

Carcinogenicity

Product:
Remarks: Not a carcinogen., Based on available data, the classification criteria are not met.

Remarks: Product contains mineral oils of types shown to be non-carcinogenic in animal skin-painting studies., Highly refined mineral oils are not classified as carcinogenic by the International Agency for Research on Cancer (IARC).

IARC	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA	No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.
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.

Reproductive toxicity

Product:

: Remarks: Not a developmental toxicant., Does not impair fertility., Based on available data, the classification criteria are not met

STOT - single exposure

Product:
Remarks: Based on available data, the classification criteria are not met.

STOT - repeated exposure

Product:
Remarks: Based on available data, the classification criteria are not met.

Aspiration toxicity

Product:
Not an aspiration hazard.

Further information

Product:
Remarks: Used oils may contain harmful impurities that have accumulated during use. The concentration of such impurities will depend on use and they may present risks to health and the environment on disposal., ALL used oil should be handled with caution and skin contact avoided as far as possible.

Remarks: Continuous contact with used engine oils has caused skin cancer in animal tests.

Remarks: Slightly irritating to respiratory system.

SECTION 12. ECOLOGICAL INFORMATION

Basis for assessment : Ecotoxicological data have not been determined specifically for this product.
Information given is based on a knowledge of the components and the ecotoxicology of similar products.
Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).(LL/EL/IL50 expressed as the nominal amount of product required to prepare aqueous test extract).

Ecotoxicity

Product:

Toxicity to fish (Acute toxicity) :
Remarks: LL/EL/IL50 > 100 mg/l
Practically non toxic:
Based on available data, the classification criteria are not met.

Toxicity to daphnia and other :

aquatic invertebrates (Acute toxicity)		Remarks: LL/EL/IL50 > 100 mg/l Practically non toxic: Based on available data, the classification criteria are not met.
Toxicity to algae (Acute toxicity)	:	Remarks: LL/EL/IL50 > 100 mg/l Practically non toxic: Based on available data, the classification criteria are not met.
Toxicity to fish (Chronic toxicity)	:	Remarks: Data not available
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	Remarks: Data not available
Toxicity to microorganisms (Acute toxicity)	:	Remarks: Data not available

Persistence and degradability

Product:

Biodegradability	:	Remarks: Not readily biodegradable. Major constituents are inherently biodegradable, but contains components that may persist in the environment.

Bioaccumulative potential

Product:

Bioaccumulation	:	Remarks: Contains components with the potential to bioaccumulate.

Mobility in soil

Product:

Mobility	:	Remarks: Liquid under most environmental conditions. If it enters soil, it will adsorb to soil particles and will not be mobile. Remarks: Floats on water.

Other adverse effects

Product:

Additional ecological information	:	Does not have ozone depletion potential, photochemical ozone creation potential or global warming potential. Product is a mixture of non-volatile components, which will not be released to air in any significant quantities under normal conditions of use.

Poorly soluble mixture.
Causes physical fouling of aquatic organisms.

Mineral oil does not cause chronic toxicity to aquatic organisms at concentrations less than 1 mg/l.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Recover or recycle if possible.
It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulations.
Do not dispose into the environment, in drains or in water courses

Waste product should not be allowed to contaminate soil or ground water, or be disposed of into the environment.
Waste, spills or used product is dangerous waste.

Contaminated packaging : Dispose in accordance with prevailing regulations, preferably to a recognized collector or contractor. The competence of the collector or contractor should be established beforehand. Disposal should be in accordance with applicable regional, national, and local laws and regulations.

Local legislation

Remarks : Disposal should be in accordance with applicable regional, national, and local laws and regulations.

SECTION 14. TRANSPORT INFORMATION

National Regulations

US Department of Transportation Classification (49 CFR Parts 171-180)

Not regulated as a dangerous good

International Regulations

IATA-DGR
Not regulated as a dangerous good

IMDG-Code
Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied. MARPOL Annex 1 rules apply for bulk shipments by sea.

Special precautions for user

Remarks : Special Precautions: Refer to Chapter 7, Handling & Storage, for special precautions which a user needs to be aware of or needs to comply with in connection with transport.

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

*: This material does not contain any components with a CERCLA RQ., Shell classifies this material as an "oil" under the CERCLA Petroleum Exclusion, therefore releases to the environment are not reportable under CERCLA.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : No SARA Hazards

SARA 313 : The following components are subject to reporting levels established by SARA Title III, Section 313:

Zinc dialkyldithiophosphate	4259-15-8	>= 0.1 - < 1 %
Zinc dialkyldithiophosphate	68784-31-6	>= 0.1 - < 1 %

Clean Water Act

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

US State Regulations

Pennsylvania Right To Know

Distillates (petroleum), hydrotreated heavy paraffinic	64742-54-7
Distillates (petroleum), solvent-dewaxed heavy paraffinic	64742-65-0
Zinc dialkyldithiophosphate	4259-15-8
Zinc dialkyldithiophosphate	68784-31-6

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.

California List of Hazardous Substances

Distillates (petroleum), hydrotreated heavy paraffinic	64742-54-7
Distillates (petroleum), solvent-dewaxed heavy paraffinic	64742-65-0

Other regulations:
The regulatory information is not intended to be comprehensive. Other regulations may apply to this material.

The components of this product are reported in the following inventories:

EINECS/ELINCS/EC	:	All components listed or polymer exempt.
TSCA	:	All components listed.
DSL	:	All components listed.

SECTION 16. OTHER INFORMATION

Further information

NFPA Rating (Health, Fire, Reactivity)	0, 1, 0

Full text of other abbreviations

ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
OSHA Z-1	:	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
ACGIH / TWA	:	8-hour, time-weighted average
OSHA Z-1 / TWA	:	8-hour time weighted average
Abbreviations and Acronyms	:	The standard abbreviations and acronyms used in this document can be looked up in reference literature (e.g. scientific dictionaries) and/or websites. ACGIH = American Conference of Governmental Industrial Hygienists ADR = European Agreement concerning the International Carriage of Dangerous Goods by Road AICS = Australian Inventory of Chemical Substances ASTM = American Society for Testing and Materials BEL = Biological exposure limits BTEX = Benzene, Toluene, Ethylbenzene, Xylenes CAS = Chemical Abstracts Service CEFIC = European Chemical Industry Council CLP = Classification Packaging and Labelling COC = Cleveland Open-Cup DIN = Deutsches Institut fur Normung DMEL = Derived Minimal Effect Level DNEL = Derived No Effect Level DSL = Canada Domestic Substance List EC = European Commission EC50 = Effective Concentration fifty ECETOC = European Center on Ecotoxicology and Toxicology Of Chemicals ECHA = European Chemicals Agency

EINECS = The European Inventory of Existing Commercial Chemical Substances
EL50 = Effective Loading fifty
ENCS = Japanese Existing and New Chemical Substances Inventory
EWC = European Waste Code
GHS = Globally Harmonised System of Classification and Labelling of Chemicals
IARC = International Agency for Research on Cancer
IATA = International Air Transport Association
IC50 = Inhibitory Concentration fifty
IL50 = Inhibitory Level fifty
IMDG = International Maritime Dangerous Goods
INV = Chinese Chemicals Inventory
IP346 = Institute of Petroleum test method N° 346 for the determination of polycyclic aromatics DMSO-extractables
KECI = Korea Existing Chemicals Inventory
LC50 = Lethal Concentration fifty
LD50 = Lethal Dose fifty per cent.
LL/EL/IL = Lethal Loading/Effective Loading/Inhibitory loading
LL50 = Lethal Loading fifty
MARPOL = International Convention for the Prevention of Pollution From Ships
NOEC/NOEL = No Observed Effect Concentration / No Observed Effect Level
OE_HPV = Occupational Exposure - High Production Volume
PBT = Persistent, Bioaccumulative and Toxic
PICCS = Philippine Inventory of Chemicals and Chemical Substances
PNEC = Predicted No Effect Concentration
REACH = Registration Evaluation And Authorisation Of Chemicals
RID = Regulations Relating to International Carriage of Dangerous Goods by Rail
SKIN_DES = Skin Designation
STEL = Short term exposure limit
TRA = Targeted Risk Assessment
TSCA = US Toxic Substances Control Act
TWA = Time-Weighted Average
vPvB = very Persistent and very Bioaccumulative

A vertical bar (|) in the left margin indicates an amendment from the previous version.

Sources of key data used to compile the Safety Data Sheet	:	The quoted data are from, but not limited to, one or more sources of information (e.g. toxicological data from Shell Health Services, material suppliers' data, CONCAWE, EU IUCLID date base, EC 1272 regulation, etc).
Revision Date	:	10/12/2018

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Quaker State High Mileage 10W-30 Motor Oil (SN/GF-5)

Version	Revision Date:	SDS Number:	Print Date: 10/16/2018
1.1	10/12/2018	800010026262	Date of last issue: 01/19/2016

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.

US / EN

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SAFETY DATA SHEET

Revision date 30-Jun-2018 **Version** 13 **Supersedes Date:** 17-Apr-2018

Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product identifier
Product Code 007.0094101

Product Name VAL SAMPLE BASE 4

Other means of identification
No information available

Recommended use of the chemical and restrictions on use
Paint, Coatings

Details of the supplier of the safety data sheet
See section 16 for more information

The Valspar Corporation
PO Box 1461
Minneapolis, MN 55440

E-mail address msds@valspar.com

Emergency telephone number
United States of America 1-888-345-5732

Section 2: HAZARDS IDENTIFICATION

Classification

Carcinogenicity	Category 1A
Specific target organ toxicity (repeated exposure)	Category 1

Label elements

Signal word **DANGER**

HAZARD STATEMENTS
May cause cancer
Causes damage to the following organs through prolonged or repeated exposure: Lung

PREVENTION
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. Do not breathe dust/fume/gas/mist/vapors/spray. Wash face, hands and any exposed skin thoroughly after handling. Do not eat, drink or smoke when using this product.

RESPONSE
IF exposed or concerned: Get medical advice/attention.

Eyes
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.

Skin
Rinse skin with water/shower. If skin irritation occurs: Get medical advice/attention.

Inhalation
IF INHALED: Call a POISON CENTER or doctor if you feel unwell.

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

STORAGE
Store locked up.

DISPOSAL
Dispose of contents/containers in accordance with local regulations.

HAZARDS NOT OTHERWISE CLASSIFIED (HNOC)
No information available.

OTHER HAZARDS
Not applicable.

UNKNOWN ACUTE TOXICITY 0% of the mixture consists of ingredient(s) of unknown toxicity.

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No	weight-%
Quartz	14808-60-7	5 - 10

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

Section 4: FIRST AID MEASURES

First Aid Measures

General advice
IF exposed or concerned: Get medical advice/attention.

Eye contact
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.

Skin Contact
Rinse skin with water/shower. If skin irritation occurs: Get medical advice/attention.

Inhalation
IF INHALED: Call a POISON CENTER or doctor if you feel unwell.

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

Most important symptoms and effects, both acute and delayed

Symptoms No information available.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

Section 5: FIRE FIGHTING MEASURES

Suitable extinguishing media
Dry chemical, CO2, water spray or alcohol-resistant foam.

Not to be used for safety reasons: Strong water jet

Specific hazards arising from the chemical
Burning produces heavy smoke. Fire may produce irritating and/or toxic gases. In the event of fire and/or explosion do not breathe fumes.

Special protective equipment for fire-fighters
Wear self-contained breathing apparatus and protective suit. Cool containers with flooding quantities of water until well after fire is out. Do not allow run-off from fire-fighting to enter drains or water courses.

Section 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions
Avoid breathing vapors or mists. Remove all sources of ignition. Use personal protective equipment as required. Keep people away from and upwind of spill/leak. Avoid contact with skin, eyes or clothing.

For emergency responders
Use personal protection recommended in Section 8.

Environmental precautions

Do not allow into any sewer, on the ground or into any body of water. If the product contaminates lakes, rivers or sewage, inform appropriate authorities in accordance with local regulations.

Methods and material for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so.

Methods for cleaning up
Dispose of waste product or used containers according to local regulations. Clean with detergents. Avoid solvent cleaners. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Pick up and transfer to properly labeled containers.

Section 7: HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling
Prevent the creation of flammable or explosive concentrations of vapor in air and avoid vapor concentration higher than the occupational exposure limits. Use personal protection recommended in Section 8. Never use pressure to empty container. Comply with the health and safety at work laws. Prevent product from entering drains. Vapors are heavier than air and may spread along floors. Vapors may form explosive mixtures with air. Do not breathe dust/fume/gas/mist/vapors/spray.

General Hygiene Considerations
Avoid contact with skin, eyes or clothing. When using do not eat, drink or smoke. Wash contaminated clothing before reuse.

Conditions for safe storage, including any incompatibilities

Storage Conditions
Keep/store only in original container. Store in accordance with local regulations. Keep unauthorized personnel away. Containers that have been opened must be carefully resealed and kept upright to prevent leakage.

Incompatible materials
Strong bases. Strong oxidizing agents. Strong acids.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Limits
If S* appears in the OEL table, it indicates this chemical contains a skin notation.

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Quartz 14808-60-7	TWA: 0.025 mg/m³ respirable particulate matter	TWA: 50 µg/m³ TWA: (250)/(%SiO2 + 5) mppcf TWA respirable fraction TWA: (10)/(%SiO2 + 2) mg/m³ TWA respirable fraction	IDLH: 50 mg/m³ respirable dust TWA: 0.05 mg/m³ respirable dust

Appropriate engineering controls

Engineering Controls
Ensure adequate ventilation, especially in confined areas. Provide local exhaust ventilation. In case of insufficient ventilation, wear suitable respiratory equipment.

Individual protection measures, such as personal protective equipment

Eye/face protection
Wear safety glasses with side shields (or goggles).

Skin and body protection
Wear suitable protective clothing.

Hand Protection
There is no one glove material or combination of materials that will give unlimited resistance to any individual or combination of chemicals. Ensure that the breakthrough time of the glove material is not exceeded. Refer to glove supplier for information on breakthrough time for specific gloves. The instructions and information provided by the glove manufacturer on use, storage, maintenance and replacement must be followed. Gloves should be replaced regularly and if there is any sign of damage to the glove material. Always ensure that gloves are free from defects and that they are stored and used correctly. The performance or effectiveness of the glove may be reduced by physical / chemical damage and poor maintenance. Wear protective gloves.

Respiratory protection
When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Thermal Protection
No information available

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	liquid
Appearance	No information available
Odor	Slight
Color	clear
Odor Threshold	No information available
pH value	No information available
Melting point/freezing point	No information available
Boiling point / boiling range	No information available °C / °F
flash point	96 °C / 205 °F
evaporation rate	No information available
Flammability (solid, gas)	No information available
Flammability Limit in Air	
Upper flammability limit:	No information available
Lower flammability limit:	No information available
Vapor Pressure	No information available
vapor density	No information available
Density (lbs per US gallon)	9.41
specific gravity	1.13
Solubility(ies)	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

Other information

Section 10: STABILITY AND REACTIVITY

Reactivity No information available.

Chemical stability Stable under normal conditions.

Possibility of Hazardous Reactions None under normal processing.

Hazardous polymerization None under normal processing.

Conditions to avoid Heat, flames and sparks.

Incompatible materials Strong bases. Strong oxidizing agents. Strong acids.

Hazardous Decomposition Products Carbon monoxide. Carbon dioxide (CO2).

Section 11: TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Eye contact
Not applicable
Skin Contact
Not applicable
Ingestion
Not applicable
Inhalation
Not applicable

Numerical measures of toxicity - Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Quartz 14808-60-7	= 500 mg/kg (Rat)	-	-

Numerical measures of toxicity - Product Information

UNKNOWN ACUTE TOXICITY 0% of the mixture consists of ingredient(s) of unknown toxicity.

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

Carcinogenicity
According to IARC, Volume 93, no significant exposure to primary particles of titanium dioxide is thought to occur from use in paints since the pigment is bound to other materials.

Chemical Name	ACGIH	IARC	NTP	OSHA
Quartz 14808-60-7	A2	Group 1	Known	X

ACGIH (American Conference of Governmental Industrial Hygienists)
A2 - Suspected Human Carcinogen.
IARC (International Agency for Research on Cancer)
Group 1 - Carcinogenic to Humans.
NTP (National Toxicology Program)
Known - Known Carcinogen.
OSHA (Occupational Safety and Health Administration of the US Department of Labor)
X - Present.

Skin corrosion/irritation Not applicable
Serious eye damage/eye irritation Not applicable
Skin sensitization Not applicable
Respiratory sensitization Not applicable
Germ cell mutagenicity Not applicable
Carcinogenicity May cause cancer
Reproductive Toxicity Not applicable
Specific target organ toxicity (single exposure) Not applicable
Specific target organ toxicity (repeated exposure)
Causes damage to the following organs through prolonged or repeated exposure: Lung
Aspiration hazard Not applicable

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity
Environmental precautions Prevent product from entering drains.

Persistence and degradability
No information available

Bioaccumulation
No information available

Mobility
No information available

Other adverse effects No information available

Section 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 Improper disposal or reuse of this container may be dangerous and illegal. Empty containers must be scrapped or reconditioned.

Section 14: TRANSPORT INFORMATION

	DOT	IMDG	IATA
14.1 UN/ID no	Not regulated	Not regulated	Not regulated
14.2 Proper shipping name			

14.3 Hazard Class
14.4 Packing Group
14.5 Environmental hazard
14.6 Special Provisions
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code No information available

The supplier may apply one of the following exceptions: Combustible Liquid (49 CFR 173.150(f)); Consumer Commodity (49 CFR 173.150(c), ICAO/IATA SP A112); Limited Quantity (49 CFR 173.150(b), ICAO Part 3 Chapter 4, IATA 2.7, IMDG Chapter 3.4); Viscous Liquid (49 CFR 173.121(b), IMDG 2.3.2.2, IATA 3.3.3.1.1, ICAO 3.2.2, ADR 2.2.3.1.5); Does Not Sustain Combustion (49 CFR 173.120(a), IATA 3.3.1.3, ICAO 3.1.3, IMDG 2.3.1.3, ADR 2.2.3.1.1 Note 1); or others as allowed under hazardous materials/dangerous goods regulations.

Section 15: REGULATORY INFORMATION

International Inventories

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory	All components are listed or exempt from listing.
DSL - Canadian Domestic Substances List	Not all components are listed or exempt from listing

US Federal Regulations

US State Regulations

Rule 66 status of product
Not photochemically reactive.

California Proposition 65
WARNING: This product contains chemicals known to the State of California to cause cancer.

U.S. EPA Label information
EPA Pesticide registration number Not applicable

U.S. State Right-to-Know Regulations

Chemical Name
Water 7732-18-5
Proprietary Non-Hazardous Ingredient - Proprietary CAS
Proprietary Non-Hazardous Ingredient - Proprietary CAS
Quartz 14808-60-7
Kaolin 1332-58-7

Section 16: OTHER INFORMATION

HMIS
Health hazards 3*
* = *Chronic Health Hazard*
Flammability 1

Physical hazards	0
Personal Protection	X

Supplier Address

Valspar Consumer Headquarters 8725 W. Higgins Rd. Suite 1000 Chicago, IL 60631 773-628-5500	The Valspar Corporation 4999 36th St. Grand Rapids, MI 49512 800-253-3957	Valspar Plasti-Kote 1636 Shawson Dr. Mississauga, Ontario L4W 1N7 905-671-8333

Prepared By	Product Stewardship
Revision date	30-Jun-2018
Revision Note	No information available

Disclaimer

The information on this Safety Data Sheet (SDS) is based on the present state of our knowledge, current national legislation and guidelines. As the specific conditions of use of the product are outside the supplier's knowledge and control the user is responsible for ensuring that the requirements of relevant legislation are complied with. This SDS should not be construed as any guarantee of the technical performance or suitability for particular applications. UNLESS SUPPLIER AGREES OTHERWISE IN WRITING, SUPPLIER MAKES NO WARRANTIES, EXPRESS OR IMPLIED, AND DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR FREEDOM FROM PATENT INFRINGEMENT. SUPPLIER WILL NOT BE LIABLE FOR ANY SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES.

End of Safety Data Sheet

Safety Data Sheet

RUST-OLEUM CORPORATION
* Trusted Quality Since 1921 *
www.rustoleum.com

1. Identification

Product Name: STRUST +SSPR 6PK GLOSS WHITE

Product Identifier: 7792830

Product Use/Class: Topcoat/Aerosols

Supplier: Rust-Oleum Corporation
11 Hawthorn Parkway
Vernon Hills, IL 60061
USA

Manufacturer: Rust-Oleum Corporation
11 Hawthorn Parkway
Vernon Hills, IL 60061
USA

Revision Date: 5/10/2017

Supercedes Date: 4/18/2017

Preparer: Regulatory Department

Emergency Telephone: 24 Hour Hotline: 847-367-7700

2. Hazard Identification

Classification

Symbol(s) of Product

Signal Word
Danger

Possible Hazards
29% of the mixture consists of ingredient(s) of unknown acute toxicity.

GHS HAZARD STATEMENTS

Carcinogenicity, category 2	H351	Suspected of causing cancer.
Compressed Gas	H280	Contains gas under pressure; may explode if heated.
Eye Irritation, category 2	H319	Causes serious eye irritation.
Flammable Aerosol, category 1	H222	Extremely flammable aerosol.
STOT, single exposure, category 3, NE	H336	May cause drowsiness or dizziness.

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.
P211	Do not spray on an open flame or other ignition source.
P251	Do not pierce or burn, even after use.
P261	Avoid breathing dust/fume/gas/mist/vapors/spray.
P264	Wash hands thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P304+P340	IF INHALED: Remove person to fresh air and keep 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.

P312	Call a POISON CENTER or doctor/physician if you feel unwell.
P337+P313	If eye irritation persists: Get medical advice/attention.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P410+P403	Protect from sunlight. Store in a well-ventilated place.
P410+P412	Protect from sunlight. Do no expose to temperatures exceeding 50°C/ 122°F.
P501	Dispose of contents/container in accordance with local, regional and national regulations.

3. Composition/Information On Ingredients

HAZARDOUS SUBSTANCES

Chemical Name	CAS-No.	Wt.% Range	GHS Symbols	GHS Statements
Propane	74-98-6	10-25	GHS04	H280
n-Butyl Acetate	123-86-4	10-25	GHS02-GHS07	H226-336
Acetone	67-64-1	10-25	GHS02-GHS07	H225-319-332-336
Titanium Dioxide	13463-67-7	10-25	Not Available	Not Available
n-Butane	106-97-8	2.5-10	GHS04	H280
Solvent Naphtha, Light Aromatic	64742-95-6	2.5-10	GHS07-GHS08	H304-332
Xylenes (o-, m-, p- isomers)	1330-20-7	2.5-10	GHS02-GHS07	H226-315-319-332
Barium Sulfate	7727-43-7	1.0-2.5	Not Available	Not Available
Propylene Glycol Monobutyl Ether	5131-66-8	1.0-2.5	GHS07	H302-315-319
Ethylbenzene	100-41-4	0.1-1.0	GHS02-GHS07-GHS08	H225-304-332-351-373

4. First-aid Measures

FIRST AID - EYE CONTACT: Immediately flush eyes with plenty of water for at least 15 minutes holding eyelids open. Get medical attention. Do NOT allow rubbing of eyes or keeping eyes closed.

FIRST AID - SKIN CONTACT: Wash skin with soap and water. Remove contaminated clothing. Get medical attention if irritation develops or persists.

FIRST AID - INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get immediate medical attention. Do NOT use mouth-to-mouth resuscitation. If you experience difficulty in breathing, leave the area to obtain fresh air. If continued difficulty is experienced, get medical assistance immediately.

FIRST AID - INGESTION: Aspiration hazard: Do not induce vomiting or give anything by mouth because this material can enter the lungs and cause severe lung damage. Get immediate medical attention. If swallowed, get medical attention.

5. Fire-fighting Measures

EXTINGUISHING MEDIA: Alcohol Film Forming Foam, Carbon Dioxide, Dry Chemical, Dry Sand, Water Fog

UNUSUAL FIRE AND EXPLOSION HAZARDS: FLASH POINT IS LESS THAN 20°F. EXTREMELY FLAMMABLE LIQUID AND VAPOR!Water spray may be ineffective. Closed containers may explode when exposed to extreme heat due to buildup of steam. Closed containers may explode when exposed to extreme heat. Vapors may form explosive mixtures with air. Vapors can travel to a source of ignition and flash back. Keep containers tightly closed. Isolate from heat, electrical equipment, sparks and open flame. Perforation of the pressurized container may cause bursting of the can. No unusual fire or explosion hazards noted.

SPECIAL FIREFIGHTING PROCEDURES: Water may be used to cool closed containers to prevent pressure buildup and possible autoignition or explosion. Full protective equipment including self-contained breathing apparatus should be used. Evacuate area and fight fire from a safe distance. Use water spray to keep fire-exposed containers cool. Containers may explode when heated.

6. Accidental Release Measures

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED: Contain spilled liquid with sand or earth. DO NOT use combustible materials such as sawdust. Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Remove all sources of ignition, ventilate area and remove with inert absorbent and non-sparking tools. Dispose of according to local, state (provincial) and federal regulations. Do not incinerate closed containers. Ventilate area, isolate spilled material, and remove with inert absorbent. Dispose of contaminated absorbent, container, and unused contents in accordance with local, state, and federal regulations.

7. Handling and Storage

HANDLING: Wash thoroughly after handling. Wash hands before eating. Remove contaminated clothing and launder before reuse. Use only with adequate ventilation. Follow all MSDS/label precautions even after container is emptied because it may retain product residues. Avoid breathing fumes, vapors, or mist. Avoid contact with eyes, skin and clothing.

STORAGE: Store in a dry, well ventilated place. Keep container tightly closed when not in use. Keep containers tightly closed. Isolate from heat, electrical equipment, sparks and open flame. Contents under pressure. Do not store above 120 ° F. Store large quantities in buildings designed and protected for storage of flammable aerosols. Keep away from heat, sparks, flame and sources of ignition. Avoid excess heat. Product should be stored in tightly sealed containers and protected from heat, moisture, and foreign materials.

8. Exposure Controls/Personal Protection

Chemical Name	CAS-No.	Weight % Less Than	ACGIH TLV-TWA	ACGIH TLV-STEL	OSHA PEL-TWA	OSHA PEL-CEILING
Propane	74-98-6	20.0	N.E.	N.E.	1000 ppm	N.E.
n-Butyl Acetate	123-86-4	20.0	50 ppm	150 ppm	150 ppm	N.E.
Acetone	67-64-1	20.0	250 ppm	500 ppm	1000 ppm	N.E.
Titanium Dioxide	13463-67-7	15.0	10 mg/m3	N.E.	15 mg/m3	N.E.
n-Butane	106-97-8	10.0	N.E.	1000 ppm	N.E.	N.E.
Solvent Naphtha, Light Aromatic	64742-95-6	5.0	N.E.	N.E.	N.E.	N.E.
Xylenes (o-, m-, p- isomers)	1330-20-7	5.0	100 ppm	150 ppm	100 ppm	N.E.
Barium Sulfate	7727-43-7	5.0	5 mg/m3	N.E.	15 mg/m3	N.E.
Propylene Glycol Monobutyl Ether	5131-66-8	5.0	N.E.	N.E.	N.E.	N.E.
Ethylbenzene	100-41-4	1.0	20 ppm	N.E.	100 ppm	N.E.

PERSONAL PROTECTION

ENGINEERING CONTROLS: Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Use explosion-proof ventilation equipment. Provide general dilution of local exhaust ventilation in volume and pattern to keep TLV of hazardous ingredients below acceptable limits. Prevent build-up of vapors by opening all doors and windows to achieve cross-ventilation.

RESPIRATORY 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. A NIOSH/MSHA approved air purifying respirator with organic vapor cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits.

SKIN PROTECTION: Use gloves to prevent prolonged skin contact. Nitrile or Neoprene gloves may afford adequate skin protection.

EYE PROTECTION: Use safety eyewear designed to protect against splash of liquids.

OTHER PROTECTIVE EQUIPMENT: Refer to safety supervisor or industrial hygienist for further guidance regarding types of personal protective equipment and their applications.

HYGIENIC PRACTICES: Wash thoroughly with soap and water before eating, drinking or smoking. Remove contaminated clothing immediately and launder before reuse.

9. Physical and Chemical Properties

Appearance:	Aerosolized Mist	**Physical State:**	Liquid
Odor:	Solvent Like	**Odor Threshold:**	N.E.
Relative Density:	0.845	**pH:**	N.A.
Freeze Point, °C:	N.D.	**Viscosity:**	N.D.
Solubility in Water:	Slight	**Partition Coefficient, n-octanol/ water:**	N.D.
Decompostion Temp., °C:	N.D.		
Boiling Range, °C:	-37 - 537	**Explosive Limits, vol%:**	1.0 - 13.0
Flammability:	Supports Combustion	**Flash Point, °C:**	-96
Evaporation Rate:	Faster than Ether	**Auto-ignition Temp., °C:**	N.D.
Vapor Density:	Heavier than Air	**Vapor Pressure:**	N.D.

(See "Other information" Section for abbreviation legend)

10. Stability and Reactivity

CONDITIONS TO AVOID: Avoid temperatures above 120°F (49°C). Avoid contact with strong acid and strong bases. Avoid all possible sources of ignition.

INCOMPATIBILITY: Incompatible with strong oxidizing agents, strong acids and strong alkalies.

HAZARDOUS DECOMPOSITION: By open flame, carbon monoxide and carbon dioxide. When heated to decomposition, it emits acrid smoke and irritating fumes. Contains solvents which may form carbon monoxide, carbon dioxide, and formaldehyde.

HAZARDOUS POLYMERIZATION: Will not occur under normal conditions.

STABILITY: This product is stable under normal storage conditions.

11. Toxicological information

EFFECTS OF OVEREXPOSURE - EYE CONTACT: Causes Serious Eye Irritation

EFFECTS OF OVEREXPOSURE - SKIN CONTACT: May cause skin irritation. Allergic reactions are possible.

EFFECTS OF OVEREXPOSURE - INHALATION: Harmful if inhaled. High gas, vapor, mist or dust concentrations may be harmful if inhaled. Avoid breathing fumes, spray, vapors, or mist. High vapor concentrations are irritating to the eyes, nose, throat and lungs. Prolonged or excessive inhalation may cause respiratory tract irritation.

EFFECTS OF OVEREXPOSURE - INGESTION: Harmful if swallowed.

EFFECTS OF OVEREXPOSURE - CHRONIC HAZARDS: May cause central nervous system disorder (e.g., narcosis involving a loss of coordination, weakness, fatigue, mental confusion, and blurred vision) and/or damage. High concentrations may lead to central nervous system effects (drowsiness, dizziness, nausea, headaches, paralysis, and blurred vision) and/or damage. Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Overexposure to xylene in laboratory animals has been associated with liver abnormalities, kidney, lung, spleen, eye and blood damage as well as reproductive disorders. Effects in humans, due to chronic overexposure, have included liver, cardiac abnormalities and nervous system damage. IARC lists Ethylbenzene as a possible human carcinogen (group 2B). Contains Titanium Dioxide. Titanium Dioxide is listed as a Group 2B-"Possibly carcinogenic to humans" by IARC. No significant exposure to Titanium Dioxide is thought to occur during the use of products in which Titanium Dioxide is bound to other materials, such as in paints during brush application or drying. Risk of overexposure depends on duration and level of exposure to dust from repeated sanding of surfaces or spray mist and the actual concentration of Titanium Dioxide in the formula. (Ref: IARC Monograph, Vol. 93, 2010)

PRIMARY ROUTE(S) OF ENTRY: Eye Contact, Ingestion, Inhalation, Skin Absorption, 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
74-98-6	Propane	N.I.	N.I.	658 mg/L Rat
123-86-4	n-Butyl Acetate	10768 mg/kg Rat	>17600 mg/kg Rabbit	> 21 mg/L Rat
67-64-1	Acetone	5800 mg/kg Rat	>15700 mg/kg Rabbit	50.1 mg/L Rat
13463-67-7	Titanium Dioxide	>10000 mg/kg Rat	2500 mg/kg	N.I.
106-97-8	n-Butane	N.I.	N.I.	658 mg/L Rat
64742-95-6	Solvent Naphtha, Light Aromatic	8400 mg/kg Rat	>2000 mg/kg Rabbit	N.I.
1330-20-7	Xylenes (o-, m-, p- isomers)	3500 mg/kg Rat	>4350 mg/kg Rabbit	29.08 mg/L Rat
5131-66-8	Propylene Glycol Monobutyl Ether	1900 mg/kg Rat	N.I.	N.I.
100-41-4	Ethylbenzene	3500 mg/kg Rat	15400 mg/kg Rabbit	17.4 mg/L Rat

N.I. - No Information

12. Ecological Information

ECOLOGICAL INFORMATION: Product is a mixture of listed components.

13. Disposal Information

DISPOSAL INFORMATION: Dispose of material in accordance to local, state, and federal regulations and ordinances. Do not allow to enter waterways, wastewater, soil, storm drains or sewer systems.

14. Transport Information

	Domestic (USDOT)	International (IMDG)	Air (IATA)	TDG (Canada)
UN Number:	N.A.	1950	1950	N.A.
Proper Shipping Name:	Paint Products in Limited Quantities	Aerosols	Aerosols	Paint Products in Limited Quantities
Hazard Class:	N.A.	2.1	2.1	N.A.
Packing Group:	N.A.	N.A.	N.A.	N.A.
Limited Quantity:	Yes	Yes	Yes	Yes

15. Regulatory Information

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, Pressure 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.
Xylenes (o-, m-, p- isomers)	1330-20-7
Ethylbenzene	100-41-4

Toxic Substances Control Act:

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.

16. Other Information

HMIS RATINGS

Health:	2*	**Flammability:**	4	**Physical Hazard:**	0	**Personal Protection:**	X

NFPA RATINGS

Health:	2	**Flammability:**	4	**Instability**	0

VOLATILE ORGANIC COMPOUNDS, g/L: 535

SDS REVISION DATE: 5/10/2017

REASON FOR REVISION: Regulatory Formula Source Changed
Product Composition Changed
Statement(s) Changed

Legend: N.A. - Not Applicable, N.E. - Not Established, N.D. - Not Determined

Rust-Oleum Corporation believes, to the best of its knowledge, information and belief, the information contained herein to be accurate and reliable as of the date of this safety data sheet. However, because the conditions of handling, use, and storage of these materials are beyond our control, we assume no responsibility or liability for personal injury or property damage incurred by the use of these materials. Rust-Oleum Corporation makes no warranty, expressed or implied, regarding the accuracy or reliability of the data or results obtained from their use. All materials may present unknown hazards and should be used with caution. The information and recommendations in this material safety data sheet are offered for the users' consideration and examination. It is the responsibility of the user to determine the final suitability of this information and to comply with all applicable international, federal, state, and local laws and regulations.

SAFETY DATA SHEET

SECTION 1 – IDENTIFICATION:

Product name: SELF SEAL® SL-100 / GG-200 FIRESTOP SEALANTS

Recommended use: Silicone Sealants for Firestopping

Restrictions on use: No further information available

Manufacturer:
NUCO INC.
150 Curtis Drive
Guelph, Ontario N1K 1N5
Tel: (519)-823-4994
Fax: (519)-823-1099

Emergency telephone: Infotrac 24 Hour Emergency Tel: 800-535-5053

SECTION 2 – HAZARDS INDENTIFICATION:

GHS Classification:

Eye irritation –	Category 2B
Skin irritation –	Category 2
Skin sensitization –	Category 1B
Carcinogenicity –	Category 2

GHS Label elements:

Hazard symbols:

Signal word: Warning

Hazard statements:
Causes skin irritation
May cause an allergic skin reaction
Causes eye irritation
Suspected of causing cancer

Precautionary statements:

Prevention:
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood.
Avoid breathing dust, fume or vapors.
Do not get in eyes, on skin or on clothing.
Wash hands and other skin areas thoroughly after handling
Use only outdoors or in a well-ventilated area.
Contaminated work clothing should not be allowed out of the workplace
Wear protective gloves/protective clothing/eye protection/face protection.

Response :
If on skin: wash with plenty of soap and water.If skin irritation or rash occurs, get medical attention.
If in eyes: rinse 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 eye irritation persists: Get medical advice/attention.
Specific treatment: Seek immediate medical advice. Refer to product label and Section 4 of this SDS.
Take off contaminated clothing and wash it before reuse.

Storage: Store locked up. Store in a well-ventilated place.

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

Other hazards: None known.

Supplemental information: 90-95% of the mixture consists of component(s) of unknown acute inhalation toxicity.

SECTION 3 – COMPOSITION / INFORMATION ON INGREDIENTS:

Substance/Mixture : Mixture

Chemical Name	CAS No.	Concentration (%)
Methyl Tri(methylethylketoxime)silane	22984-54-9	3.0 - 7.0
Amorphous Silica	7631-86-9	3.0 – 7.0
Calcium Carbonate	1317-65-3	15.0 – 40.0
Gray Pigmented Sealant:		
Carbon Black	1333-86-4	0.1 – 1.0
Titanium Dioxide	13463-67-7	0.1 – 1.0

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to the health or the environment and hence require reporting in this section.

SECTION 4 - FIRST AID MEASURES:

Eye contact: Flush with copious quantities of lukewarm water for at least 15 minutes. Do not attempt to physically remove the solids or gums from the eye. Seek medical attention immediately if irritation persists.

Skin contact: Remove contaminated clothing. Wash thoroughly with warm water and non-abrasive soap. Seek medical attention if you feel ill or a reaction develops.

Inhalation: Remove to fresh air and provide water. Seek medical attention if you feel ill or a reaction develops.

Ingestion: Do not induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention.

Most important symptoms/effects, acute and delayed: None known

Indication of immediate medical attention and special treament needed: Provide general supportive measures and trewat symptomatically.

SECTION 5 - FIRE FIGHTING MEASURES:

Suitable extinguishing media: Carbon dioxide, dry chemical, water fog or foam. Water can be used to cool fire exposed containers.

Unsuitable extinguishing media: None known.

Specific hazards arising from the chemical: Exposure to combustion products such as carbon oxides, silicone oxides and formaldehyde may be hazard to health.

Special protective equipment and precautions for fire fighters: Self-contained breathing apparatus and protective clothing should be worn in fighting large fires involving chemicals. Determine the need to evacuate or isolate the area according to your local emergency plan.

SECTION 6 – ACCIDENTAL RELEASE MEASURES:

Personal precautions, protective equipment and emergency procedures: Follow safe handling advice and personal protective equipment recommenation in Section 8.

Environment precautions:	Discharged into the environment must be avoided. Retain and dispose of contaminated wash water. Local authorities should be advised if significant spillages cannot be contained.
Methods and materials for containment and cleaning up:	Restrict access to the area of the spill. Provide ventilation, NIOSH/MHSA approved respirator and protective clothing. Scrape up sealant and place in container for disposal. Clean area as appropriate since silicone materials can represent a slip hazard. Cleaning may require steam, solvents or detergents. Dispose of saturated absorbant or cleaning materials appropriately, since spontaneous heating may occur. Local, state, provincial, federal laws and regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup.

SECTION 7 – HANDLING AND STORAGE:

Precautions for safe handling:	Handle in accordance with good industrial hygiene and safety practice. Take care to prevent spills, waste and minimize release to the environment.
Conditions for safe storage, including any incompatibilities:	Store in an adequately ventilated area under dry conditions between 50°F (10°C) to 77°F (25°C) and keep container tightly sealed when not in use. Do not store with strong oxidizing agents.

SECTION 8 – EXPOSURE CONTROL / PERSONAL PROTECTION:

Control Parameters:

Ingredient	CAS No.	Value Type (form of exposure)	Control parameters/ Permissible concentration	Basis
Amorphous Silica	7631-86-9	TWA (Dust)	20 Million particles per cubic foot (Silica)	OSHA Z-3
		TWA (Dust)	80 mg/m^3/%SiO2 (Silica)	OSHA Z-3
		TWA	6 mg/m^3 (Silica)	NIOSH REL
Calcium Carbonate	1317-65-3	TWA (Inhalable particulate)	10	ACGIH TLV
		TWA (respirable particulate)	5 mg/m^3	ACGIH TLV
Carbon Black	1333-86-4	TWA	3.5 mg/m^3	NIOSH REL
		TWA	3.5 mg/m^3	OSHA Z-1
		TWA (Inhalable fraction)	3 mg/m^3	ACGIH
Titanium Dioxide	13463-67-7	TWA	15 mg/m^3	OSHA PEL
		TWA	10 mg/m^3	ACGIH TLV

Hazardous components without workplace control parameters:
Methyl Tri(methylethylketoxime)silane (CAS# 22984-54-9)

Occupational exposure limits of decomposition products:

Ingredient	CAS No.	Value Type (form of exposure)	Control parameters/ Permissible concentration	Basis
Methyl Ethyl Ketoxime	96-29-7	TWA	10 ppm	DCC OEL
	Further information: Skin sensitization			
		TWA	10 ppm	US WEEL

Engineering controls:	Ensure adequate ventilation, especially in confined areas. Minimize workplace exposure concentrations. Use respiratory protection unless local exhaust ventilation is provided or exposures are within guidelines.
Personal protective equipment:	Safety glasses with side-protection, impermeable gloves (e.g., neoprene, nitrile, silver shield (R)), coveralls or apron are important in preventing contamination of eyes, skin and clothing. Wash thoroughly after handling.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES:

Appearance:	Viscous liquid, smooth self-levelling sealant / Paste, thixotropic sealant
Odor:	Low odor
Odor threshold:	Not available
pH (ASTM D1293):	Not available
Melting point/Freezing point:	Not available
Initial boiling point and boiling range:	Not available
Flash point:	Not applicable
Evaporation rate:	Not available
Flammability (solid, gas):	Not classified as a flammability hazard
Upper flammability or explosion limit:	Not available
Lower flammability or explosion limit:	Not available
Vapor pressure:	Less than 5 mm Hg
Vapor density:	Greater than 1
Specific gravity:	1.31 – 1.33
Solubility:	Not available
Partition coefficient: n-octanol/water:	Not available
Auto-ignition temperature:	Not available
Decomposition temperature:	Not available
Viscosity:	Not available
Volatile Organic Content:	25 grams per liter, <3% by weight (Chemically Curing Sealants and Caulks – CARB Method 310: VOC less water, less exempt compounds and LVP-VOCs).

SECTION 10 – STABILITY AND REACTIVITY:

Reactivity:	Not classified as a reactivity hazard.
Chemical stability:	Stable under normal conditions.
Possibility of hazardous reactions:	Will not occur.
Conditions to avoid:	Moisture and incompatible materials.
Incompatible materials:	Strong oxidizing agents or electrophiles (e.g. ferric chloride). Concentrated acids or bases can degrade the silicone polymer.
Hazardous decomposition products:	Carbon dioxide, silicone dioxide, calcium oxide, nitrogen oxides, formaldehyde, and traces of incompletely burned carbon products.

SECTION 11 - TOXICOLOGICAL INFORMATION:

Information on the likely routes of exposure:

Inhalation:	Prolonged inhalation may be harmful.
Ingestion:	May be harmful if swallowed.
Skin contact:	May cause skin irritation.
Eye contact:	May cause eye irritation.

Symptoms related to the physical, chemical and toxicological characteristics:	May cause an allergic skin reaction. Suspected of causing cancer. Although the carbon black (CAS# 1333-86-4) is encapsulated by the silicone sealant, prolonged overexposure to carbon black dust causes lung fibrosis. Although the titanium dioxide (CAS# 13463-67-7) is encapsulated by the silicone sealant, prolonged overexposure to titanium dioxide dust causes tightness pain in the chest, coughing and difficulty breathing. The curing vapor, Methyl Ethyl Ketoxime (CAS# 96-29-7), may cause drowsiness, injure blood, liver and may irritate or harm nose, throat, lungs and eyes. Direct contact with eyes will irritate. Direct contact with skin may irritate.

Acute toxicity:

Ingredient name	Result	Species	Dose	Exposure
Amorphous Silica	LD50 Oral	Rat	>3,300 mg/kg	----
	LC50 Inhalation	Rat	>2.08 mg/L	4 hours
	LD50 Dermal	Rabbit	>5,000 mg/kg	----
Methyltri(methylethylketoxime) silane	LD50 Oral	Rat	>2,520 mg/kg	----
	LC50 Inhalation	Rat	>4.8 mg/L	4 hours
Calcium Carbonate	LD50 Oral	Rat	6,450 mg/kg	----
Carbon Black	LD50 Oral	Rat	>5,000 mg/kg	----
	LC50 Inhalation	Rat	>0.0046 mg/L	4 hours
Titanium Dioxide	LD50 Oral	Rat	>5,000 mg/kg	----
	LC50 Inhalation	Rat	>6.82 mg/L	4 hours

Skin corrosion/irritation: Skin irritation possible through repeated direct contact with the ketoxime in the uncured sealant.

Serious eye damage/irritation: Eye irritation possible through repeated direct contact with the ketoxime in the uncured sealant.

Aspiration hazard: No data available

Specific target organ toxicity - single exposure: Not classified based on available information.

Specific target organ toxicity – repeated exposure: Not classified based on available information.

Respiratory or skin sensitization: Allergic skin sensitization through repeated direct contact with the ketoxime in the uncured sealant.

Carcinogenicity: No ingredients considered by IARC, NTP or OSHA to be carcinogens. Male rodents exposed to Methyl Ethyl Ketoxime (CAS# 96-29-7) vapor throughout their lifetime developed liver carcinomas. These carcinomas were statistically increased at a concentration of 374 ppm.

Pigmented Sealants: carbon black (CAS# 1333-86-4) and titanium dioxide (CAS# 13463-67-7) are classified as IARC Group 2B – Possibly Carcinogenic to Humans.

Reproductive toxicity: Methyl Tri(methylethylketoxime)silane (CAS# 22984-54-9) is not considered a reproductive or developmental toxin based on studies on rats.

Teratogenicity: Methyl Tri(methylethylketoxime)silane (CAS# 22984-54-9) did not show teratogenic effects in animal experiments, even at maternally toxic concentrations.

Germ-cell mutagenicity: Methyl Ethyl Ketoxime (CAS# 96-29-7) is not considered mutagenic or genotoxic based on in vivo and in vitro studies.

SECTION 12 – ECOLOGICAL INFORMATION:

Ecotoxicity:

Methyltri(methylethylketoxime)silane:

Toxicity to fish: LC50 (Oncorhynchus mykiss (rainbow trout)): >120 mg/L, 96 hrs.

Toxicity to daphnia and other aquatic invertebrates: EC50 (Daphnia magna (water flea)): >120 mg/L, 48 hrs.

Toxicity to algae: ErC50 (Selenastrum capricornutum (green algae)): 94mg/L, 72 hrs.

Carbon black:

Toxicity to fish:	LC50 (Danio rerio (zebra fish)): >1,000 mg/L, 96 hrs.
Toxicity to daphnia and other aquatic invertebrates:	EC50 (Daphnia magna (water flea)): >5,600 mg/L, 24 hrs.
Toxicity to algae:	NOEC (Desmodesmus subspicatus (green algae)): 10,000 mg/L, 72 hrs.

Titanium Dioxide:

Toxicity to fish:	LC50 (Oncorhynchus mykiss (rainbow trout)): >100 mg/L, 96 hrs.
Toxicity to daphnia and other aquatic invertebrates:	EC50 (Daphnia magna (water flea)): >100 mg/L, 48 hrs.
Toxicity to algae:	EC50 (Skeletonema costatum (marine diatom)): >10,000 mg/L, 72 hrs.
Toxicity to bacteria:	EC50: >1,000 mg/L, 3 hrs.

Persistence and degradability:

Methyltri(methylethylketoxime)silane:

Biodegradability:	Not readily biodegradable Biodegradation: 14.5%, 21 days

Bioaccumulative potential:

Methyltri(methylethylketoxime)silane:

Partition coefficient: n-octanol/water:	log Pow: 11.2

Mobility in soil: No data available.
Other adverse effects: No data available.

SECTION 13 – DISPOSAL CONSIDERATIONS:

Disposal instructions: This material and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water supplies. Dispose of contents/container in accordance with local, regional, national and international regulations.

Waste from residues: Dispose of in accordance with local regulations.

Contaminated packaging: Dispose of as unused product in a safe way.
Empty containers should be taken to an approved waste handling site for recycling or disposal.

SECTION 14 - TRANSPORT INFORMATION:

Shipping information: Not subject to DOT, TDG, IMDG Code or IATA Regulations.

SECTION 15 - REGULATORY INFORMATION:

SARA 304 Extremely Hazardous Substances Reportable Quantity:
This product does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards: Acute Health Hazard, Chronic Health Hazard

SARA 302: No chemicals in this product are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313: This product does not contain any chemical components with known CAS No. that exceed the threshold reporting levels established by SARA Title III, Section 313.

Pennsylvania Right To Know:

Dimethyl siloxane, hydroxy-terminated	70131-67-8
Amorphous Silica	7631-86-9
Methyl Tri(methylethylketoxime)silane	22984-54-9
Calcium Carbonate	1317-65-3
Carbon black	1333-86-4
Titanium dioxide	13463-67-7

New Jersey Right To Know:

Dimethyl siloxane, hydroxy-terminated	70131-67-8
Amorphous Silica	7631-86-9
Methyl Tri(methylethylketoxime)silane	22984-54-9
Dimethyl Siloxane, Trimethylsiloxy-terminated	63148-62-9
Calcium Carbonate	1317-65-3
Carbon black	1333-86-4
Titanium dioxide	13463-67-7

California Proposition 65: This product contains trace amount of substances, in the form of airborne or unbound particles, known to the State of California to cause cancer or other reproductive harm.

The ingredients of this product are reported in the following inventories:

TSCA: All chemical substances in this product are included on or exempted from listing on the TSCA inventory of Chemical Substances.

DSL: All chemical substances in this product comply with the CEPA 1999 and NSNR and are on or exempted from listing on the Canadian Domestic Substances List (DSL).

NFPA Profile: Health 2, Flammability 1, Reactivity 0

SECTION 16 - OTHER INFORMATION:

Prepared by: Technical Services Department
Revision date: Dec 17, 2017

The information herein is given in good faith, but no warranty, express or implied, is made. Product users should make independent judgements of the suitability of this information to ensure proper use and to protect the health and safety of employees.

Form: SDS SELFSEALSL100-GG200 **Rev.:** 2 **Date:** 12/17

SAFETY DATA SHEET
Solopol Classic

This Safety Data Sheet has been prepared in accordance with the Preparation of Safety Data Sheets for Hazardous Chemicals Code of Practice (Safe Work Australia, February 2016).

SECTION 1: Identification: Product identifier and chemical identity

Product identifier

Product name Solopol Classic

Product No. SOL2LT-AUS, SOL4LTR-AUS

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

Application Heavy-duty hand cleanser.

Details of the supplier of the safety data sheet

Supplier

DEB Australia Pty Ltd
Unit 1
1 Secombe Place
Moorebank
NSW 2170
Australia
(61 2) 8763 1800
(61 2) 8763 1899
sales@deb.com.au

Emergency telephone number

Emergency telephone NSW Poisons Information Centre Contact 131126 New Zealand call 0800 764 766

SECTION 2: Hazard(s) identification

Classification of the substance or mixture

Physical hazards Not Classified

Health hazards Eye Dam. 1 - H318

Environmental hazards Not Classified

Label elements

Signal word Danger

Hazard statements H318 Causes serious eye damage.

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.
P332+P313 If skin irritation occurs: Get medical advice/ attention.
P312 Call a POISON CENTER or doctor/ physician if you feel unwell.

Contains DISODIUM LAURETH SULFOSUCCINATE, ALCOHOLS, C12-14 ETHOXYLATED, Sodium Laureth Sulfate

SECTION 3: Composition and information on ingredients

Solopol Classic

DISODIUM LAURETH SULFOSUCCINATE	**5-10%**
CAS number: 68815-56-5	
Classification Eye Dam. 1 - H318	

ALCOHOLS, C12-14 ETHOXYLATED	**1-5%**
CAS number: 68439-50-9 M factor (Acute) = 1	
Classification Acute Tox. 4 - H302 Skin Irrit. 2 - H315 Eye Dam. 1 - H318	

Sodium Laureth Sulfate	**1-5%**
CAS number: —	
Classification Acute Tox. 4 - H302 Skin Irrit. 2 - H315 Eye Dam. 1 - H318 Skin Sens. 1 - H317	

Sulfated castor oil	**1-5%**
CAS number: 8002-33-3	
Classification Eye Irrit. 2A - H319	

The full text for all hazard statements is displayed in Section 16.

INCI Aqua, Juglans regia shell powder, Laureth-6, Sodium laureth sulfate, Sulfated castor oil, Disodium laureth sulfosuccinate, Sodium chloride, Polyglycerin-6, Oleic acid, Titanium dioxide, Aloe barbadensis extract, Cellulose gum, Xanthan Gum, Sodium benzoate, Potassium sorbate, Citric acid, Parfum

SECTION 4: First aid measures

Description of first aid measures

Inhalation Not relevant. Unlikely route of exposure as the product does not contain volatile substances.

Ingestion Rinse mouth thoroughly with water. Get medical attention if any discomfort continues.

Skin Contact Not relevant.

Eye contact Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 15 minutes. Continue to rinse for at least 15 minutes. Get medical attention promptly if symptoms occur after washing.

Most important symptoms and effects, both acute and delayed

Inhalation No specific symptoms known.

Solopol Classic

Ingestion	No specific symptoms known.
Skin contact	Does not decompose when used and stored as recommended.
Eye contact	May cause temporary eye irritation.

Indication of any immediate medical attention and special treatment needed

Notes for the doctor	No specific recommendations.

SECTION 5: Firefighting measures

Extinguishing media

Suitable extinguishing media	The product is not flammable. Use fire-extinguishing media suitable for the surrounding fire.

Special hazards arising from the substance or mixture

Hazardous combustion products	No known hazardous decomposition products.

Advice for firefighters

Protective actions during firefighting	No specific firefighting precautions known.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions	Avoid contact with eyes.

Environmental precautions

Environmental precautions	Not considered to be a significant hazard due to the small quantities used.

Methods and material for containment and cleaning up

Methods for cleaning up	Flush away spillage with plenty of water. Avoid contamination of ponds or watercourses with washing down water. Absorb spillage with non-combustible, absorbent material. Do not discharge into drains or watercourses or onto the ground.

Reference to other sections

Reference to other sections	For waste disposal, see Section 13.

SECTION 7: Handling and storage, including how the chemical may be safely used

Precautions for safe handling

Usage precautions	Avoid contact with eyes.

Conditions for safe storage, including any incompatibilities

Storage precautions	Store in closed original container at temperatures between 0°C and 40°C.

Specific end use(s)

Specific end use(s)	The identified uses for this product are detailed in Section 1.

SECTION 8: Exposure controls and personal protection

Ingredient comments	EU = Indicative Values according to Commission Directive 91/322/EEC.

Exposure controls

Appropriate engineering controls	Not relevant.

Solopol Classic

Eye/face protection	Not required normally but wear eye protection if you are conducting an operation where there is a risk of this product getting in the eyes.
Hand protection	Not relevant.
Hygiene measures	Not relevant.
Respiratory protection	No specific recommendations.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Appearance	Liquid Viscous
Colour	Beige.
Odour	Characteristic.
pH	5.0 - 5.5 (10%)
Initial boiling point and range	approx. 100 °C
Flash point	> 100 °C

SECTION 10: Stability and reactivity

Reactivity	There are no known reactivity hazards associated with this product.
Stability	Stable at normal ambient temperatures.
Possibility of hazardous reactions	None known.
Conditions to avoid	There are no known conditions that are likely to result in a hazardous situation.
Materials to avoid	No specific material or group of materials is likely to react with the product to produce a hazardous situation.
Hazardous decomposition products	Does not decompose when used and stored as recommended.

SECTION 11: Toxicological information

Information on toxicological effects

Respiratory Sensitisation	It is unlikely that inhalation will be a route of exposure.
Eye Irritation/Damage	Neat product: may irritate the eye.
Skin Sensitisation	Not sensitising.

Acute toxicity - oral

ATE oral (mg/kg)	10,174.75

Inhalation	No specific health hazards known.
Ingestion	May cause discomfort if swallowed.
Skin Contact	Skin irritation should not occur when used as recommended.
Eye contact	May cause temporary eye irritation

Solopol Classic

SECTION 12: Ecological Information

Ecotoxicity Not regarded as dangerous for the environment.

Persistence and degradability

Persistence and degradability The product is biodegradable.

Bioaccumulative potential

Bioaccumulative Potential No data available on bioaccumulation.

Mobility in soil

Mobility The product is soluble in water.

Other adverse effects

Other adverse effects None known.

SECTION 13: Disposal considerations

Waste treatment methods

General information When handling waste, the safety precautions applying to handling of the product should be considered.

Disposal methods Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

SECTION 14: Transport information

Road transport notes Not classified.

Rail transport notes Not classified.

Sea transport notes Not classified.

Air transport notes Not classified.

UN number

Not applicable.

UN proper shipping name

Not applicable.

Transport hazard class(es)

Not applicable.

Packing group

Not applicable.

Environmental hazards

Environmentally hazardous substance/marine pollutant

No.

Special precautions for user

Not applicable.

Transport in bulk according to Annex II of MARPOL 73/78 Not applicable.

Solopol Classic

SECTION 15: Regulatory Information

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

National regulations	Country/RegionInventoryStatus AustraliaAICSAll components listed
Guidance	Country/RegionInventoryStatus AustraliaAICSAll components listed

SECTION 16: Any other relevant information

Revision comments	New SDS Software
Revision date	8/12/2016
Revision	1
SDS No.	21355
Hazard statements in full	H302 Harmful if swallowed. H315 Causes skin irritation. H317 May cause an allergic skin reaction. H318 Causes serious eye damage. H319 Causes serious eye irritation.
Notes for Risk Phrases and Hazard Statements in Full	The full text for Risk Phrases and Hazard Statements in section 16 relates to the reference numbers in sections 2 and 3 and not necessarily the finished product classification.

MARMON/KEYSTONE LLC

THE PIPE AND TUBING PEOPLE

P.O. BOX 992, Butler, PA 16003-0992
EMERGENCY PHONE NUMBER (724) 283-3000

ISSUE DATE
JANUARY 1, 2015

MATERIAL SAFETY DATA SHEET

TRADE NAME (Common Name or Synonym)	CHEMICAL NAME
Carbon and Alloy Steels	AISI/SAE Grades 10xx thru 93xx

I. INGREDIENTS

Material or Component	CAS Number	% Weight	EXPOSURE LIMITS	
			OSHA PEL (mg/m³)	ACGIH TLV (mg/m³)
Base Metal				
Iron (Fe)	1309-37-1	86.5-99.5	10 Oxide Fume	5 Oxide Fume
Alloying Elements				
Aluminum (Al)	7429-90-5	<0.1-0.5	15 Dust	10 Dust/5 Fume
Bismuth (Bi)	7440-69-9	<0.2-0.5	Not Established	Not Established
Boron (B)	7440-42-8	<.01-1.0	15 Oxide Fume	10 Oxide Fume
Carbon (C)	7440-44-0	<.10-1.5	Not Established	3.5 AS Carbon Black
Chromium (Cr)	7440-47-3	<.40-10	1.0 Chrome Metal	0.5 Chrome Metal
Columbium (Cb)	7440-03-1	<.15-.35	Not Established	Not Established
Copper (Cu)	7440-50-8	<.30-1.90	1.0 Fume/1.0 Dust	0.2 Fume/1.0 Dust
Lead (Pb)	7439-92-1	<.01-.15	.05 Dust & Fume	.15 Dust & Fume
Manganese (Mn)	7439-96-5	<.04-0.7	5c Dust/5c Fume	5c Dust/1 Fume
Molybdenum (Mo)	7439-98-7	<.15-1.10	15 Insoluble Compounds	10 Insoluble Compounds
Nickel (Ni)	7440-02-0	<.01-10	1 Nickel Metal	1 Nickel Metal
Phosphorous (P)	7723-14-0	<.040-.12	0.1 Phosphorous	0.1 Phosphorous
Silicon (Si)	7440-21-3	<.15-2.00	15 Dust	10 Total Dust
Sulfur (S)	7704-34-9	<.050-.35	13 Sulfur Dioxide	5 Sulfur Dioxide
Vanadium (V)	7440-62-2	<.01-0.15	0.5c Dust/0.1c Fume	0.05 Dust/0.05 Fume
Zinc Coating	1314-13-2	2 oz/ft²	5 Oxide Fume	10 Dust/5 Fume
Aluminum Coating	7429-90-5	0.5 oz/ft²	Not Established	10 Dust/5 Fume

Note: The above listing is a summary of elements used in alloying steel. Various grades of steel will contain different combinations of these elements. Trace elements may also be present in minute amounts. No permissible exposure limits (PEL) or thresholds limit values (TLV) exist for steel. Values shown are applicable to component elements.

II. PHYSICAL DATA

MATERIAL IS (At Normal Conditions)	APPEARANCE AND ODOR	% VOLATILE BY VOLUME	VAPOR DENSITY
☐ LIQUID ■ SOLID ☐ GAS ☐ OTHER	Grey-Black, Odorless	N/A	N/A

ACIDITY/ALKALINITY			VAPOR PRESSURE
pH = N/A	Melting Point Approx. 2800 °F Boiling Point N/A °F	Specific Gravity (H_2O) = 1) Approx. 7 Solubility in water (% by weight) N/A	(mm Hg at 20° C) N/A

III. PERSONAL PROTECTIVE EQUIPMENT

RESPIRATORY PROTECTION Appropriate dust/mist/fume respirator should be used to avoid excessive inhalation of particulates. If exposure limits are reached or exceeded, use NIOSH approved equipment.	HANDS, ARMS AND BODY Protective gloves should be worn as required for welding, burning or handling operations.
EYES AND FACE Safety glasses should be worn when grinding or cutting. Face shields should be worn when welding or cutting.	OTHER CLOTHING AND EQUIPMENT As required depending on operations and safety codes.

IV. EMERGENCY MEDICAL PROCEDURES

INHALATION:	Remove to fresh air; if condition continues, consult a physician.
EYE CONTACT:	Flush thoroughly with running water to remove particulate; obtain medical attention.
SKIN CONTACT:	Remove particles by washing thoroughly with soap and water. Seek medical attention if condition persists.
INGESTION:	If significant amounts of metal are ingested, consult physician.

V. HEALTH/SAFETY INFORMATION

Health

Steel products in their solid state present no inhalation, ingestion, or contact health hazard. Operations such as burning, welding, sawing,brazing, grinding, and machining, which result in elevating the temperature of the product to, or above its melting point, or result in the generation of airborne particulates may present hazards. The major exposure hazard is inhalation. Effects or overexposure to fume and dust are as follows:

ACUTE: Excessive inhalation of metallic fumes and dust may result in irritation of eyes, nose and throat. High concentrations of fumes and dust of iron-oxide, manganese, copper, zinc and lead may result in metal fume fever. Typical symptoms last from 12 to 48 hours and consist of a metallic taste in the mouth, dryness and irritation of the throat, chills and fever.

CHRONIC: Chronic and prolonged inhalation of high concentrations of fumes or dust of the following elements may lead to the conditions listed opposite the element:

- Aluminum: May initiate fibrotic changes to lung tissue
- Bismuth: No chronic debilitating symptoms indicated
- Boron: No chronic debilitating symptoms indicated
- Chromium: Lesions of the skin and mucous membranes, possibly cancer of the nose or lungs-bronchogenic carcinoma
- Copper: No chronic debilitating symptoms indicated
- Iron: Siderosis, pulmonary effects. No chronic debilitating symptoms indicated
- Lead: Anemia, urinary dysfunction, weakness, constipation, nausea, nervous disorder
- Manganese: Bronchitis, pneumonitis, lack of coordination
- Molybdenum: Respiratory tract irritation, possible liver and kidney damage, bone deformity
- Nickel: Lesions of the skin and mucous membranes, possibly cancer of the nose or lungs-bronchogenic carcinoma
- Phosphorous: Necrosis of the mandible
- Sulfur: (As sulfur dioxide) Edema of the lungs
- Vanadium: (As vanadium pentoxide) Emphysema, pneumonia
- Zinc: Gastrointestinal inflammation reported in animal studies

MEDICAL CONDITIONS AGGRAVATED BY 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.

OCCUPATIONAL EXPOSURE LIMITS: See Products Ingredients Section I. Chromium and Nickel have been identified by the International Agency for Research on Cancer (IARC) and/or the National Toxicology Program (NTP) as potential cancer causing agents.

Fire & Explosion

FLASH POINT	AUTO IGNITION TEMPERATURE	FLAMMABLE LIMITS IN AIR	EXTINGUISHING MEDIA
N/A °F	N/A	Lower N/A % Upper	For molten metal use dry power or sand.

FIRE AND EXPLOSION HAZARDS
Steel tubular products do not present fire or explosion hazards under normal conditions. Fine metal particles such as produced in grinding or sawing can burn. High concentrations of metallic fines in the air may present an explosion hazard.

EXTINGUISHING MEDIA NOT TO BE USED
Do not use water on molten metal.

Reactivity

STABILITY	INCOMPATIBILITY (MATERIALS TO AVOID)
■ Stable ☐ Unstable	Reacts with strong acids to form hydrogen gas.

CONDITIONS TO AVOID: Steel at temperatures above the melting point may liberate fume containing oxides of iron and alloying elements. Avoid generation of airborne fume and dust.

HAZARDOUS DECOMPOSITION PRODUCTS:
Metallic dust or fumes may be produced during welding, burning, grinding and possibly machining. Refer to ANSI Z49.1.

VI. ENVIRONMENTAL

SPILL OR LEAK PROCEDURES

Fine turnings and small chips should be swept or vacuumed. Scrap metal can be reclaimed for re-use.

WASTE DISPOSAL METHOD*

Used or unused product should be disposed of in accordance with Federal, State or Local Laws and Regulations.
*Disposer must comply with Federal, State and Local disposal or discharge laws.

VII. ADDITIONAL INFORMATION

In welding, precautions should be taken for airborne contaminants which may originate from components of the welding rod.

Arc or spark generated when welding or burning could be a source of ignition for combustion and flammable materials.

DISCLAIMER

The information in this MSDS was obtained from sources which we believe are reliable, however, the information is provided without any representation or warranty, express or implied, regarding the accuracy or correctness.

The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be 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.

Teck

ZINC METAL
SAFETY DATA SHEET

SECTION 1. IDENTIFICATION

Product Identity: Zinc Metal

Trade Names and Synonyms: High Grade Zinc; Special High Grade Zinc; Zinc, Zn, CGG Alloy <1% Aluminum.

Manufacturer:
Teck Metals Ltd.
Trail Operations
Trail, British Columbia
V1R 4L8
Emergency Telephone: 250-364-4214

Supplier:
In U.S.:
Teck American Metal Sales Incorporated
501 North Riverpoint Blvd, Suite 300
Spokane, WA
USA, 99202

Other than U.S.:
Teck Metals Ltd.
#1700 – 11 King Street West
Toronto, Ontario
M5H 4C7

Preparer:
Teck Metals Ltd.
Suite 3300 – 550 Burrard Street
Vancouver, British Columbia
V6C 0B3

Date of Last Review: July 15, 2015.

Date of Last Edit: July 15, 2015.

Product Use: Zinc metal is used to coat steel for corrosion protection (galvanizing, electroplating, electrogalvanizing), as an alloying element in bronze, brass, aluminum and other metal alloys, for zinc die casting alloys, for zinc dry cell and zinc/air batteries, for the production of zinc sheet for architectural and coinage applications, as a reducing agent in organic chemistry and for other chemical applications.

SECTION 2. HAZARDS IDENTIFICATION

CLASSIFICATION:

NOTE: In the form in which it is sold this product is not regulated as a Hazardous Product in the U.S. or Canada. This Safety Data Sheet is provided for information purposes only.

Health		Physical	Environmental
Acute Toxicity (Oral, Inhalation)	– Does not meet criteria	Does not meet criteria for any Physical Hazard	Aquatic Toxicity – (Short Term/Long Term) Does not meet any criteria
Skin Corrosion/Irritation	– Does not meet criteria		
Eye Damage/Eye Irritation	– Does not meet criteria		
Respiratory or Skin Sensitization	– Does not meet criteria		
Mutagenicity	– Does not meet criteria		
Carcinogenicity	– Does not meet criteria		
Reproductive Toxicity	– Does not meet criteria		
Specific Target Organ Toxicity:			
Acute Exposure	– Does not meet criteria		
Chronic Exposure	– Does not meet criteria		

LABEL:

Symbols: None required	**Signal Word:** None required
Hazard Statements	**Precautionary Statements:**
None required	None required

Emergency Overview: A lustrous bluish-silver metal that does not burn in bulk but may form explosive mixtures if dispersed in air as a fine powder. Zinc oxide fume is formed when zinc metal is heated to or near the boiling point, or is burned. Contact with acids or alkalis generates flammable hydrogen gas which can accumulate in poorly ventilated areas. Do NOT use water or foam on burning zinc metal. Apply dry chemical, sand or special powder extinguishing media. Zinc is relatively non-toxic and poses little immediate hazard to the health of emergency response personnel or to the environment in an emergency situation.

Potential Health Effects: Zinc is essentially non-toxic to humans. However, zinc oxide fumes may cause mild local irritation to eyes, nose, throat and upper airways. Acute over-exposure to zinc oxide fume may cause metal fume fever, characterized by flu-like symptoms such as chills, fever, nausea, and vomiting which may be delayed 3 – 10 hours in onset. In most cases, dermal exposure to zinc or zinc compounds does not result in any noticeable toxic effects. Zinc is not listed as a carcinogen by OSHA, NTP, IARC, ACGIH or the EU (see Toxicological Information, Section 11).

Potential Environmental Effects: Zinc metal has relatively low bioavailability and poses no immediate ecological risks. Depending on physico-chemical characteristics (e.g., pH, water hardness), compounds of zinc metal can be toxic, particularly in the aquatic environment. Zinc also has the potential to bioaccumulate in plants and animals in both aquatic and terrestrial environments (see Ecological Information, Section 12).

SECTION 3. COMPOSITION / INFORMATION ON INGREDIENTS

COMPONENTS	CAS Registry No.	CONCENTRATION (% wgt/wgt)
Zinc	7440-66-6	99+%

Note: See Section 8 for Occupational Exposure Guidelines.

SECTION 4. FIRST AID MEASURES

Eye Contact: *Symptoms:* Mild eye irritation, redness. Do not rub eye(s). Let the eye(s) water naturally for a few minutes. Look right and left, then up and down. If particle/dust does not come out, cautiously rinse eye(s) with lukewarm, gently flowing water for 5 minutes or until particle/dust is removed, while holding eyelid(s) open. If eye irritation persists, get medical advice/attention. DO NOT attempt to manually remove anything from the eye.

Skin Contact: *Symptoms:* Soiling of skin. No health effects expected. If irritation does occur, rinse with lukewarm, gently flowing water for 5 minutes or until the product is removed. If skin irritation occurs or you feel unwell, get medical advice/attention. *Molten Metal:* Flush contact area to solidify and cool but do not attempt to remove encrusted material or clothing. Cover burns and seek medical attention immediately.

Inhalation: *Symptoms:* Coughing and irritation in heavy dust clouds. If symptoms are experienced remove source of contamination or move victim from exposure area to fresh air immediately and obtain medical advice. NOTE: Metal fume fever may develop 3-10 hours after exposure to zinc oxide fumes. If symptoms of metal fume fever (flu-like symptoms) develop, obtain medical attention.

Ingestion: *Symptoms:* Stomach upset, nausea, diarrhea. If swallowed, no specific intervention is indicated as this material is not likely to be hazardous by ingestion. However, if you are concerned or you feel unwell, obtain medical advice.

SECTION 5. FIRE FIGHTING MEASURES

Fire and Explosion Hazards: Massive metal is difficult to ignite and is not considered a serious fire hazard. However, finely-divided metallic dust may form flammable or explosive dust clouds when dispersed in the air at high concentrations and exposed to heat, flame, or other ignition sources. Bulk dust in a damp state may heat spontaneously and ignite on exposure to air. Contact with acids and alkali hydroxides results in evolution of hydrogen gas which is potentially explosive. Mixtures with potassium chlorate or fused ammonium nitrate may explode on impact.

Extinguishing Media: Apply dry chemical, dry sand, or special powder extinguishing (Class D) media. Do NOT use water, carbon dioxide or foam on molten metals. Water may be ineffective for extinguishing a fire but should be used to keep fire-exposed billets, ingots and castings cool.

Fire Fighting: If possible, move material not yet involved in the fire from the fire area. If this is not possible, cool fire-exposed zinc by applying hose streams or fogs. Apply only dry chemical, sand, or special powder extinguishing media to any molten or burning zinc metal. Take extreme caution to prevent contact of water with molten or burning zinc. Zinc foil in particular may ignite in the presence of water. Zinc oxide fumes may evolve in fires. Fire fighters should be fully trained and wear full protective clothing including an approved, self-contained breathing apparatus which supplies a positive air pressure within a full face-piece mask.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Procedures for Cleanup: Control source of release if possible to do so safely. Clean up spilled material immediately observing precautions in Section 8, Personal Protection. Molten metal should be allowed to cool and harden before cleanup. Once solidified wear gloves, pick up and return to process. Powder or dust should be cleaned up by sweeping/shoveling, etc. Solid metal is recyclable. Return uncontaminated spilled material to the process if possible. Place contaminated material in clean, dry,

suitably labelled containers for later recovery or disposal. Treat or dispose of waste material in accordance with all local, state/provincial, and national requirements.

Personal Precautions: Protective clothing, gloves, and a respirator are recommended for persons responding to an accidental release (see also Section 8). Close-fitting safety goggles may be necessary in some circumstances to prevent eye contact with zinc dust and fume. Where molten metal is involved, wear heat-resistant gloves and suitable clothing for protection from hot-metal splash.

Environmental Precautions: Zinc metal has relatively low bioavailability and poses no immediate ecological risks. Depending on physico-chemical characteristics (e.g., pH, water hardness), compounds of zinc metal can be toxic, particularly in the aquatic environment. Zinc also has the potential to bioaccumulate in plants and animals in both aquatic and terrestrial environments. Releases of the product to water and soil should be prevented.

SECTION 7. HANDLING AND STORAGE

Store zinc in a DRY covered area, separate from incompatible materials. Zinc ingots suspected of containing moisture should be THOROUGHLY DRIED before being added to a molten bath. Ingots may contain cavities that collect moisture. Entrained moisture will expand explosively when immersed in a molten bath.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational Exposure Guidelines: *(Time-Weighted Average (TWA) concentration over 8 hr unless otherwise indicated)*

Component	ACGIH TLV	OSHA PEL	NIOSH REL
Zinc	None established†	None established†	None established†

NOTE: OEGs for individual jurisdictions may differ from those given above. Check with local authorities for the applicable OEGs in your jurisdiction.

ACGIH - American Conference of Governmental Industrial Hygienists; OSHA - Occupational Safety and Health Administration; NIOSH - National Institute for Occupational Safety and Health. TLV – Threshold Limit Value, PEL – Permissible Exposure Limit, REL – Recommended Exposure Limit.

† NOTE: While there is no established OEL for zinc as such, there are OELs for zinc oxide which may be formed during burning, welding or other fuming processes.

The OSHA PEL final rule limits for zinc oxide dust are 10 mg/m^3 (total) and 5 mg/m^3 (respirable); the OSHA PEL final rule limit for zinc oxide fume is 5 mg/m^3. Note that the OSHA PEL final rule limits are currently non-enforceable due to a court decision. The OSHA PEL transitional limits therefore remain in force at present. They are 15 mg/m^3 (total) and 5 mg/m^3 (respirable) while the transitional PEL for zinc oxide fume is 5 mg/m^3. The ACGIH TLV for zinc oxide is 2 mg/m^3 (respirable fraction) with a Short Term Exposure Limit (STEL) of 10 mg/m^3 (respirable fraction). The NIOSH REL for zinc oxide (dust or fume) is 5 mg/m^3 10 hr TWA with a 15 mg/m^3 ceiling limit (15 minute sample) for zinc oxide dust and a 10 mg/m^3 STEL for zinc oxide fume (15 minute sample).

NOTE: The selection of the necessary level of engineering controls and personal protective equipment will vary depending upon the conditions of use and the potential for exposure. The following are therefore only general guidelines that may not fit all circumstances. Control measures to consider include:

Ventilation: Use adequate local or general ventilation to maintain the concentration of zinc oxide fumes in the working environment well below recommended occupational exposure limits. Supply sufficient replacement air to make up for air removed by the exhaust system. Where metallic particles of zinc are being collected and transported by a ventilation system, use a non-sparking, grounded ventilation system separate from other exhaust ventilation systems. Locate dust collectors and fans outdoors if possible and provide dust collectors with explosion vents or blow out panels. Refer to appropriate NFPA Standards 484, 654, and/or 68 for specific guidance.

Protective Clothing: Gloves and coveralls, shop coat or other work clothing are recommended to prevent prolonged or repeated direct skin contact when zinc is processed. Eye protection should be worn where fume or dust is generated. Respiratory protection may be required where zinc oxide fume is generated. Where hot or molten metal is handled, heat-resistant gloves, face shield, and clothing to protect from hot metal splash should be worn. Safety type boots are recommended.

Respirators: Where zinc oxide dust or fumes are generated and cannot be controlled to within acceptable levels, use appropriate NIOSH-approved respiratory protection equipment (a 42CFR84 Class N, R or P-95 particulate filter cartridge).

General Hygiene Considerations: Always practice good personal hygiene. Refrain from eating, drinking, or smoking in work areas. Thoroughly wash hands before eating, drinking, or smoking in appropriate designated areas. No special packaging materials are required.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Bluish-silver lustrous metal	**Odour:** None	**Odour Threshold:** None	**pH:** Not Applicable
Vapour Pressure: 1 mm at 487°C Negligible at 20°C	**Vapour Density:** Not Applicable	**Melting Point/Range:** 420° C	**Boiling Point/Range:** 908° C
Relative Density (Water = 1): 7.1	**Evaporation Rate:** Not Applicable	**Coefficient of Water/Oil Distribution:** Log P (oct) = -0.47 (estimated)	**Solubility:** Insoluble in Water (0.2 mg/l @ pH 7)
Flash Point: Not Applicable.	**Flammable Limits** (LEL/UEL): LEL (Zinc Dust): 500 g/m^3; UEL Not Determined.	**Auto-ignition Temperature:** Approx 680°C (dust cloud in air), Approx 460°C (dust layer).	**Decomposition Temperature:** Oxidation starts approx 450°C

SECTION 10. STABILITY AND REACTIVITY

Stability & Reactivity: Massive metal is stable and not considered reactive under normal temperatures and pressures. Hazardous polymerization or runaway reactions will not occur. Zinc metal slowly becomes covered with a white coating of a hydrated basic zinc carbonate on exposure to moist air. Fine, condensed zinc dust or powder may heat spontaneously and ignite on exposure to air when damp. Zinc metal will react with acids and strong alkalis to generate hydrogen gas. A violent, explosive reaction may occur when powdered zinc is heated with sulphur. Powdered zinc will become incandescent or ignite in the presence of fluorine, chlorine, bromine or interhalogens (e.g., chlorine trifluoride). Powdered zinc can also react explosively with halogenated hydrocarbons if heated. Mixtures with potassium chlorate or fused ammonium nitrate may explode on impact.

Incompatibilities: Contact with acids and alkalis will generate highly flammable hydrogen gas. Contact with acidic solutions of arsenic and antimony compounds may evolve highly toxic ARSINE or STIBINE gas. Incompatible with strong oxidizing agents such as chlorine, fluorine, bromine, sodium, potassium or barium peroxide, sodium or potassium chlorate, chromium trioxide and fused ammonium nitrate. Also incompatible with elemental sulphur dust, halogenated hydrocarbons or chlorinated solvents, chlorinated rubber, and ammonium sulphide or calcium disulphide.

Hazardous Decomposition Products: High temperature operations such as oxy-acetylene cutting, electric arc welding or overheating a molten bath will generate zinc oxide fume which, on inhalation in sufficient quantity, can produce metal fume fever, a transient influenza-like illness.

SECTION 11. TOXICOLOGICAL INFORMATION

General: Zinc, especially in the metal form, is relatively non-toxic. However, it can react with other materials, such as oxygen or acids, to form compounds that can be potentially toxic. The primary route of exposure would be through the generation and inhalation of zinc oxide fume.

Acute:
Skin/Eye: In most cases, dermal exposure to zinc or zinc compounds does not result in any noticeable toxic effects. Zinc metal is not chemically irritating to the eyes.

Inhalation: If excessive quantities of zinc oxide fume are inhaled, it can result in the condition called metal fume fever. The symptoms of metal fume fever will occur within 3 to 10 hours, and include immediate dryness and irritation of the throat, tightness of the chest and coughing, which may later be followed by flu-like symptoms of fever, malaise, perspiration, frontal headache, muscle cramps, low back pain, occasionally blurred vision, nausea, and vomiting. The symptoms are temporary and generally disappear, without medical intervention, within 24 to 48 hours of onset. There are no recognized complications, after affects, or chronic affects that result from this condition.

Ingestion: Zinc is not expected to be harmful if ingested. When ingested in excessive quantities, zinc can irritate the stomach resulting in nausea, vomiting, abdominal pain and diarrhea. Ingestion is not a typical route of occupational exposure.

Chronic:
There is no chronic form of metal fume fever but in rare instances an acute incident may be followed by complaints such as bronchitis or pneumonia. Some workers may develop a short-term immunity (resistance) so that repeated exposure to zinc oxide fumes does not cause metal fume fever. This immunity (resistance) however is quickly lost after short absences from work (weekends or vacations). Workers exposed to finely-divided metallic zinc for up to 35 years revealed no acute or chronic illnesses

attributable to zinc. Prolonged or repeated skin contact with zinc dust or powder may cause dryness, irritation and cracking (dermatitis) since zinc is astringent and may tend to draw moisture from the skin. Zinc is not listed as a human carcinogen by the Occupational Safety and Health Administration (OSHA), the National Toxicology Program (NTP), the International Agency for Research on Cancer (IARC), the American Conference of Governmental Industrial Hygienists (ACGIH) or the European Union (EU).

Animal Toxicity:

Ingredient:	Acute Oral Toxicity:	Acute Dermal Toxicity:	Acute Inhalation Toxicity:
Zinc	>5,000 mg/kg[†]	No data	No data

[†] LD_{50}, Mouse, Oral,

SECTION 12. ECOLOGICAL INFORMATION

Zinc metal is relatively insoluble; however, processing of the product or extended exposure in aquatic and terrestrial environments may lead to the release of zinc compounds in bioavailable forms. Zinc is highly mobile, and can be toxic in the aquatic environment with water hardness, pH and dissolved organic carbon content being major regulating factors. Zinc also has the potential to bioaccumulate in plants and animals in both aquatic and terrestrial environments. In soils, zinc is moderately mobile in accordance with soil properties (e.g., cation exchange capacity, pH, redox potential, chemical species); these properties also influence its bioavailability to terrestrial plants.

SECTION 13. DISPOSAL CONSIDERATIONS

If material cannot be returned to process or salvage, dispose of in accordance with applicable regulations.

SECTION 14. TRANSPORT INFORMATION

PROPER SHIPPING NAME ..... Not applicable – not regulated.
U.S. DOT AND TRANSPORT CANADA HAZARD CLASSIFICATION .... Not applicable
U.S. DOT AND TRANSPORT CANADA PID ..... Not applicable
MARINE POLLUTANT..... No
IMO CLASSIFICATION ..... Not regulated

SECTION 15. REGULATORY INFORMATION

U.S.
INGREDIENTS LISTED ON TSCA INVENTORY..... Yes

HAZARDOUS UNDER HAZARD COMMUNICATION STANDARD..... No

CERCLA SECTION 103 HAZARDOUS SUBSTANCES ..... Zinc.....Yes ..... RQ: 1,000 lb. (454 kg.)*
* reporting not required when diameter of the pieces of solid metal released is equal to or exceeds 100 micrometers (0.004 inches).

EPCRA SECTION 302 EXTREMELY HAZARDOUS SUBSTANCE..... No

EPCRA SECTION 311/312 HAZARD CATEGORIES ..... No Hazard Categories Apply

EPCRA SECTION 313 TOXIC RELEASE INVENTORY:..... This product does not contain any toxic chemicals subject to the Toxic Release reporting requirements. However, potential by-products from working with this product - "Zinc (Fume or Dust)" CAS 7440-66-6 are reportable.

SECTION 16. OTHER INFORMATION

Date of Original Issue: July 23, 1997 **Version:** 01 *(First edition)*

Date of Latest Revision: July 15, 2015 **Version:** 14

The information in this Safety Data Sheet is based on the following references:

- American Conference of Governmental Industrial Hygienists, 2004, Documentation of the Threshold Limit Values and Biological Exposure Indices, 7th Edition plus updates.

- American Conference of Governmental Industrial Hygienists, 2015, Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices.
- American Conference of Governmental Industrial Hygienists, 2015, Guide to Occupational Exposure Values.
- Bretherick's Handbook of Reactive Chemical Hazards, 20th Anniversary Edition (P. G. Urben, Ed), 1995.
- Canadian Centre for Occupational Health and Safety (CCOHS) Hamilton, ON, CHEMINFO Record No. 239 – Zinc Metal.
- European Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures, amending and repealing directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 (REACH).
- Health Canada, SOR/2015-17, Hazardous Products Regulations, 30 January 2015.
- International Agency for Research on Cancer (IARC), Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Man, 1972 – present, (multi-volume work), World Health Organization, Geneva.
- Merck & Co., Inc., 2001, The Merck Index, An Encyclopedia of Chemicals, Drugs, and Biologicals, 13th Edition.
- National Library of Medicine, National Toxicology Information Program, Hazardous Substance Data Bank (on-line version).
- Oak Ridge National Laboratory, Oak Ridge, Tennessee – Toxicity Summary for Zinc and Zinc Compounds, April 1992.
- Patty's Toxicology, 5th Edition, 2001 E. Bingham, B. Cohrssen & CH Powell (Eds.).
- U.S. Dept. of Health and Human Services, National Institute of Environmental Health Sciences, National Toxicology Program (NTP), 13th Report on Carcinogens, October 2014.
- U.S. Dept. of Health and Human Services, National Institute for Occupational Safety and Health, NIOSH Pocket Guide to Chemical Hazards (on-line edition).
- U.S. Dept. of Health and Human Services, Public Health Service, Agency for Toxic Substances and Disease Registry, Toxicological Profile for Zinc - August 2005.
- U.S. Dept. of Health and Human Services, National Institute for Occupational Safety and Health, Registry of Toxic Effects of Chemical Substances (RTECS), CCOHS on-line version.
- U.S. Occupational Safety and Health Administration, 1989, Code of Federal Regulations, Title 29, Part 1910.

Notice to Reader

Although reasonable precautions have been taken in the preparation of the data contained herein, it is offered solely for your information, consideration and investigation. Teck American Metal Sales Incorporated and Teck Metals Ltd. extend no warranty and assume no responsibility for the accuracy of the content and expressly disclaim all liability for reliance thereon. This safety data sheet provides guidelines for the safe handling and processing of this product; it does not and cannot advise on all possible situations. Therefore, your specific use of this product should be evaluated to determine if additional precautions are required. Individuals exposed to this product should read and understand this information and be provided pertinent training prior to working with this product.

MATERIAL SAFETY DATA SHEET

MATERIAL IDENTIFICATION AND USE

MATERIAL NAME: STAINLESS/SPECIALTY STEEL

SYNONYMS: INCLUDES ALL SHEET PRODUCTS, PLATE, STRIP, BAR, INGOTS, SLABS AND TUBULAR PRODUCTS.

MATERIAL USE: MANUFACTURE OF ARTICLES

Marmon/Keystone Canada Inc.
SPECIALTY STEELS

1220 Heritage Road
Burlington ON L7L 4X9
(905) 319-4646

HAZARDOUS INGREDIENTS BASE METAL			(ALL VALUES ARE EXPRESSED AS WEIGHT PERCENT)			
COMPONENT *	CAS NUMBER	TLV ACGIH (mg/m³)	LD50/LC50	ELECTRIC ALL0Y STEEL	TOOL STEELS	300, 400 SERIES STAINLESS STEELS
IRON	7438-89-5	5 (Fume)	NOT AVAILABLE	95	90	80
CHROMIUM	7440-47-3	0.5	NOT AVAILABLE	5	25	30
NICKEL	7440-02-0	1	>9 gm/kg (oral-rat)	5	5	35
MOLYBDENUM	7439-98-7	10	NOT AVAILABLE	2	5	6
VANADIUM	1314-62-1	0.05	NOT AVAILABLE	2	5	-
COBALT	7440-48-4	0.8	NOT AVAILABLE	75	8	1
MANGANESE	7439-96-5	1 (fume)	>9 gm/kg (oral-rat)	-	-	2.5
ALUMINUM	7429-90-5	10	NOT AVAILABLE	1.5	-	-
SILICON	7440-21-3	10	NOT AVAILABLE	2	2.5	-
COPPER	7440-50-8	.2 (fume)	NOT AVAILABLE	-	-	5

* AS REQUIRED BY WHMIS INGREDIENT DISCLOSURE LIST. FOR EXACT COMPOSITION REFER TO ANALYSIS OR SPECIFICATIONS.

NON-METALLIC COATINGS

DRY-LUBE	- MIXTURE OF BORATE AND CARBONATE SOAP LUBRICANTS FOR METAL FORMING.
PRE-LUBE	- PETROLEUM BASED OIL COATING USED FOR METAL FORMING.
LUBE OIL	- LUBRICATING PROTECTIVE PETROLEUM BASED OIL.
SLUGHING OIL	- MINERAL OIL BASED PROTECTIVE COATING CONTAINING SMALL QUANTITIES OF ANTI-OXIDANTS.
VANISHING OIL	- SOLVENT APPLIED PETROLEUM OIL PROTECTIVE COATING LEAVING A WAX-LIKE PROTECTIVE COATING.

NOTE: INDIVIDUAL COATING COMPONENTS ARE PRESENT AT VALUES BELOW THE REPORTING REQUIREMENTS OF THE WHMIS INGREDIENT DISCLOSURE LIST.

PHYSICAL DATA

PHYSICAL STATE: SOLID | ODOUR: na | EVAPORATION RATE: na | BOILING POINT: na
VAPOUR PRESSURE: na | VAPOUR DENSITY: na | FREEZING POINT: 1530 C | DENSITY 7.86
COEFFICIENT WATER/OIL DISTRIBUTION: na | pH: na | ODOUR THRESHOLD: na
APPEARANCE: SILVER GREY METALLIC (STEEL) | SOLUBILITY IN WATER: na

FIRE AND EXPLOSION HAZARDS

-- NOT APPLICABLE --

CHEMICAL STABILITY: YES

INCOMPATIBILITY TO OTHER SUBSTANCES: YES

CONDITIONS OF REACTIVITY: na

CONTACT WITH MINERAL ACIDS WILL RELEASE HYDRAGEN GAS

HAZARDOUS DECOMPOSITION PRODUCTS: na

PAGE -1- LEGEND: na NOT APPLICABLE, U UNKNOWN

MATERIAL NAME: STAINLESS/SPECIALTY STEEL

PREVENTIVE MEASURES

PERSONAL PROTECTIVE EQUIPMENT:	DEPENDENT UPON PROCESS BEING PERFORMED ON MATERIAL. EACH OPERATION MUST BE ADDRESSED FOR SUITABLE EQUIPMENT.
GLOVES (Specify): LEATHER FACED	EYE ((Specify):
CLOTHING (Specify): na	FOOTWEAR (Specify): na
RESPIRATORY (Specify): NA	OTHER: (Specify): NA APPROVED FUME FILTER RESPIRATOR, GLOVES & EYEWEAR REQUIRED DURING WELDING.
ENGINEERING CONTROLS (e.g. ventilation, enclosures, specify):	GENERAL OR LOCAL EXHAUST VENTILATION DURING WELDING.

LEAK AND SPILL PROCEDURES: na

STORAGE REQUIREMENTS: na

SPECIAL SHIPPING INFORMATION: na

TOXICOLOGICAL PROPERTIES OF MATERIAL

ROUTE OF ENTRY: PROLONGED SKIN CONTACT WITH COATED STEEL MAY CAUSE SKIN IRRITATION IN SENSITIVE INDIVIDUALS. INHALATION OF METAL PARTICULATE OR ELEMENTAL, OXIDE FUMES GENERATED DURING WELDING, BURNING, GRINDING OR MACHINING MAY POSE ACUTE OR CHRONIC HEALTH EFFECTS.

EFFECTS OF ACUTE EXPOSURE TO MATERIAL: INHALATION OF OVEREXPOSURE TO MANGANESE, COPPER OR ZINC (COATED PRODUCTS) MAY CAUSE METAL FUME FEVER CHARACTERIZED BY FEVER AND CHILLS (i.e. FLU-LIKE SYMPTOMS) APPEARS 4-6 HOURS AFTER EXPOSURE WITH NO LONG-TERM EFFECTS.

EFFECTS OF CHRONIC EXPOSURE TO MATERIAL: PROLONGED INHALATION OVEREXPOSURE TO METAL FUME FROM PRODUCT MAY CAUSE THE FOLLOWING EFFECTS: BENIGN PNEUMONOCONIOSIS (SIDEROSIS) WITH FEW OR NO SYMPTOMS (IRON OXIDE); CERTAIN NICKEL AND CHROMIUM COMPOUNDS HAVE BEEN LISTED WITH IARC AS NASAL AND LUNG CARCINOGENS. COBALT DUST MAY RESULT IN AN ASTHAMA-LIKE CONDITION (COUGH/SHORTNESS OF BREATH).

IRRITANCY OF MATERIAL: na	SENSITIZATION TO MATERIAL: na
REPRODUCTIVE EFFECTS: na	TERATOGENICITY OF MATERIAL: na
CARCINOGENICITY OF MATERIAL:	IARC LISTS CERTAIN HEXAVALENT CHROMIUM COMPOUNDS UNDER ITS GROUP 1 CATEGORY – "CONFIRMED HUMAN CARCINOGEN". IARC LISTS NICKEL AND CERTAIN NICKEL COMPOUNDS UNDER ITS GROUP 2A CATEGORY – "SUSPECTED HUMAN CARCINOGEN".
SYNERGISTIC MATERIALS: na	
MUTAGENICITY OF MATERIAL: na	

NOTE: PROLONGED SKIN CONTACT MAY CAUSE REDDENING AND DRYING OF SKIN OR DERMATITIS IN SENSITIVE INDIVIDUALS FROM NICKEL, CHOMIUM AND COBALT CONTENT IN STELL.

FIRST AID MEASURES

SKIN:	MAINTAIN GOOD PERSONAL HYGIENE, WASH WITH SOAP AND WATER, SEEK MEDICAL ATTENTION IF NECESSARY.
INHALATION:	REMOVE TO FRESH AIR, SEEK MEDICAL ATTENTION IF NECESSARY.

PREPARATION OF MATERIAL SAFETY DATA SHEET

PREPARED BY: CSSCI

Preparation Date: January 3, 2015

NOTE: CONTACT SUPPLIER FOR ADDITIONAL PRODUCT INFORMATION.

Dustbane

1 Chemical product and company identification / Identification du produit chimique et de l'entreprise

1.1. Product identifier

Product name: Dustbane Sweeping Compound
Product form: Powder
Product code: 52509, 52100, 52135

1.1. Identificateur du produit

Nom du produit : Poudre à balayer Dustbane
État du produit : Poudre
Code du produit : 52509, 52100, 52135

1.2. Relevant identified uses of chemical product and uses advised against

Recommended use: Sweeping Compound
Restriction on use: For intended use only.

1.2. Utilisations pertinentes identifiées du produit chimique et utilisations non recommandées

Usage du produit : Poudre à balayer
Utilisation déconseillée : Pour usage destiné seulement.

1.3. Details of the supplier of the safety data sheet

Dustbane Products Ltd.
25 Pickering Pl.
Ottawa, Ontario K1G 5P4
T: 1-800-387-8226 F: 1-800-363-5309
info@dustbane.ca www.dustbane.ca

1.3. Détails du fournisseur de la fiche signalétique

Les Produits Dustbane Ltée
25 pl. Pickering
Ottawa, Ontario K1G 5P4
T : 1-800-387-8226 F : 1-800-363-5309
info@dustbane.ca www.dustbane.ca

1.4. Emergency telephone number

CANUTEC: 1-613-996-6666 (Collect)

1.4. Numéro de téléphone d'urgence

CANUTEC : 1-613-996-6666 (À frais virés)

2 Hazard(s) identification / Reconnaissance des dangers

2.1. Classification of the chemical product

General: None.

2.1. Classification du produit chimique

Générale : Aucun.

2.2. Label elements

Classification: Eye Irritation: 2B

Signal word: Warning!

Hazard statements: H320: Causes eye irritation.

Precautionary statements: P233 Keep container tightly closed.
P264: Wash exposed areas thoroughly after handling.
P501: Dispose of contents and container in accordance with local, regional and national regulations.

2.2. Éléments de l'étiquette

Classification : Irritation oculaire : 2B

Mention d'avertissement : Avertissement!

Mentions de danger : H320 : Provoque une irritation des yeux.

Conseils de prudence : P233 : Maintenir le récipient fermé de manière étanche.
P264 : Se laver les zones exposées soigneusement après manipulation.
P501 : Éliminer le contenu/récipient conformément à la réglementation locale/régionale/nationale.

If swallowed: Rinse mouth. Do NOT induce vomiting. Immediately call a poison center or doctor/physician.

If on skin (or hair): Rinse skin with water/shower. If skin irritation occurs get medical advice/attention. Wash contaminated clothing 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 call a doctor/physician.

Other hazards not otherwise classified: None.

En cas d'ingestion : rincer la bouche. NE PAS faire vomir. Appeler immédiatement un centre antipoison ou un médecin.

En cas de contact avec la peau (ou les cheveux) : Rincer la peau à l'eau/se doucher. En cas d'irritation ou cutanée : consulter un médecin. Laver les vêtements contaminés avant de les réutiliser.

En cas de contact avec les yeux : rincer avec précaution à l'eau pendant plusieurs minutes. Enlever les lentilles de contact si la victime en porte et si elles peuvent être facilement enlevées. Continuer à rincer. Si l'irritation oculaire persiste, appeler un médecin.

Danger(s) non classé(s) ailleurs : Aucun.

3 Composition/information on ingredients // Composition/information sur les ingrédients

3.2. Mixture

Dangerous components:

3.2. Mélange

Composants dangereux :

Chemical name / Nom du produit chimique	CAS number / Numéro CAS	Quantity / Quantité (%)
Sand, crystalline / Sable, cristallin	14808-60-7	30 - 60

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 and hence require reporting in this section.

Il n'existe pas d'autres ingrédients présents qui, dans la connaissance actuelle du fournisseur et dans les concentrations applicables, soient classés comme dangereux pour la santé et doivent donc être signalés dans cette section.

4 First aid / Premiers soins

4.1. Description of first aid measures

General: Wash contaminated clothing before reuse.

Ingestion: Drink copious amounts of water and provide fresh air. Immediately call a doctor. Do not induce vomiting.

Skin: Wash with soap and water and rinse thoroughly. Consult a doctor if skin redness and irritation persist.

Eyes: Rinse opened eye for several minutes under running water. Remove contact lenses, if present and easy to do so – continue rinsing.

4.1. Description des mesures de premiers soins

Générale : Laver les vêtements contaminés avant de les réutiliser.

Ingestion : Buvez beaucoup d'eau et de l'air frais. Appeler immédiatement un médecin. Ne pas faire vomir.

Contact avec la peau : Laver avec du savon et rincer soigneusement. Consulter un médecin si la rougeur et l'irritation persistent.

Contact avec les yeux : Rincer les yeux pendant plusieurs minutes sous l'eau courante. Retirer les lentilles de contact si elle est présente et facile à faire - continuer à rincer.

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

Causes eye irritation.

4.2. Principaux symptômes et effets, tant aigus que différés

Provoque une irritation des yeux.

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

Treat symptomatically.

4.3. Indications sur les éventuels soins médicaux et traitements particuliers nécessaires

Traiter les symptômes.

5 Firefighting measures / Mesures de lutte contre l'incendie

5.1. Extinguishing media

Use extinguishing media appropriate for the surrounding fire. Non-flammable and non-combustible.

5.1. Moyens d'extinctions

Utiliser des moyens d'extinction adaptés au feu environnant. Ininflammable et incombustible.

5.2. Special hazards arising from the substance or mixture

Fire hazard: Unknown.

Exposure hazards: In case of accidental fire and extreme heat conditions, the following gaseous products can be released: carbon monoxides and dioxides (COx).

5.2. Dangers particuliers résultant de la substance ou du mélange

Risque d'incendie : Non connu.

Dangers dus à l'exposition : En cas d'incendie accidentel et de conditions de chaleur extrême, les produits gazeux suivants peuvent être libérés : monoxydes et dioxydes de carbone (COx).

5.3. Advice for firefighters

Protection during firefighting: Full protective clothing should be worn before a confined fire space is entered. Self-contained breathing apparatus should be worn.

Other information: This product is not flammable.

5.3. Conseils aux pompiers

Protection lors de lutte contre l'incendie : Port de vêtements protecteurs appropriés si incendie dans espace confiné. Utiliser un équipement de respiration autonome.

Autre information : Ce produit est ininflammable .

6 Accidental release measures / Mesures à prendre en cas de dispersion accidentelle

6.1. Personal precautions, protective equipment and emergency procedures

All persons dealing with the clean-up should wear the appropriate chemically protective equipment. Keep people away from and upwind of split/leak. Restrict access to area until completion of clean-up. Refer to protective measures listed in sections 7 and 8.

6.1. Précautions individuelles, équipement de protection et procédures d'urgence.

Toutes les personnes qui s'occupe du le nettoyage doivent porter de l'équipement de protection approprié. Garder les personnes à l'écart de l'endroit de déversement / fuite. Restreindre l'accès à la zone jusqu'à la fin du nettoyage. Se référer aux mesures de protection énumérées dans les sections 7 et 8.

6.2. Environmental precautions

No special measures required.

6.2. Précautions pour la protection de l'environnement

Aucune mesure spéciale nécessaire.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up: Do not allow material to contaminate ground water system. Dispose contaminated material as waste according to Section 13.

Other information: None.

6.3. Méthodes et matériel de confinement et de nettoyage

Méthodes de nettoyage : Ne pas laisser le matériel contaminer le système d'eau souterraine. Éliminer les déchets contaminés en tant que déchets conformément à l'article 13.

Autres informations : Aucune.

6.4. Reference to other sections

Not applicable.

6.4. Référence aux autres sections

Non applicable.

7 Handling and storage / Manipulation et entreposage

7.1. Precautions for safe handling

Handle in accordance with good industrial hygiene and safety practice. Use protective equipment recommended in section 8. Avoid contact with skin, eyes or clothing. Wash face, hands, and any exposed skin thoroughly after handling.

7.1. Précautions à prendre pour une manipulation sans danger

Manipuler conformément aux normes d'hygiène industrielle et aux consignes de sécurité. Utiliser de l'équipement de protection recommandée dans la section 8. Éviter le contact avec la peau, les yeux ou les vêtements. Se laver le visage, les mains et toute peau exposée, après manipulation.

7.2. Conditions for safe storage, including incompatibilities

Keep container tightly closed and store in a in cool, dry conditions at no more than 30°C. Keep out of reach of children.

7.2. Conditions d'entreposage sécuritaire; y compris toutes incompatibilités

Conserver le récipient bien fermé et entreposer dans des conditions fraîches et sèches à pas plus de 30 °C. Tenir hors portée des enfants.

8 Exposure control and personal protection / Contrôle de l'exposition et protection personnelle

Chemical name / Nom du produit chimique	CAS number / Numéro CAS	ACGIH	OSHA PEL
Particulates not otherwise classified / Particules non classées par ailleurs		OEL TWA (mg/m³) Alberta: 10 mg/m³ (dust) British Columbia: 10 mg/m³ (total dust) Manitoba: 10 mg/m³ (inhalable particles) New Brunswick: 3 mg/m³ (particulate matter containing no asbestos and <1% crystalline silica, respirable fraction) Newfoundland & Labrador: 10 mg/m³ (inhalable particles) Nova Scotia: 10 mg/m³ (inhalable particles) Nunavut: 5 mg/m³ (respirable mass) Northwest Territories: 5 mg/m³ (respirable mass) Ontario: 10 mg/m³ (inhalable) Prince Edward Island: 10 mg/m³ (inhalable particles) Quebec: 10 mg/m³ (including dust, inert or nuisance particulates; containing no asbestos and <1% crystalline silica – total dust) Saskatchewan: 10 mg/m³ (insoluble or poorly soluble-inhalable fraction)	TWA (mg/m³) 3 mg/m³ Respirable fraction, 10 mg/m³ Total dust

8.1. Control parameters

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

8.1. Paramètres de contrôle

Le produit ne contient pas de substance présentant des valeurs en quantité significative qui nécessite une surveillance en lieu de travail.

8.2. Exposure control

Appropriate engineering controls: Ensure appropriate ventilation.

Hand protection: Wear protective gloves when extensive exposure to product is possible.

Eye protection: Wear eye/face protection when extensive exposure to product is possible. Wear as appropriate tightly fitting safety goggles; Safety glasses with side-shields.

Skin and body protection: No special measures required.

Respiratory protection: None required under normal usage.

Environmental exposure control: Avoid release to the environment.

8.2. Contrôle d'exposition

Contrôles d'ingénierie appropriés : Assurer une ventilation approprié.

Protection des mains : Porter des gants de protection lorsque l'exposition prolongée au produit est possible.

Protection oculaire : Portez une protection pour les yeux/visage lorsque l'exposition extensive au produit est possible. Porter des lunettes de protection étanches selon le cas; Lunettes de sécurité avec protections latérales.

Protection de la peau et du corps : Aucune mesure particulière n'est requise.

Protection respiratoire : Non nécessaire dans les conditions normales.

Contrôle de l'exposition environnementale : Éviter le rejet dans l'environnement.

9 Physical and chemical properties / Propriétés physiques et chimiques

9.1. Information on basic physical and chemical properties

Physical state:	Powder.
Odour:	Mild.
Odour threshold:	Not determined.
Colour:	Green.
pH (at 25°C):	Not determined.
Melting point:	Not applicable.
Boiling point:	Not determined
Flash point:	Not determined.
Evaporation rate:	Not determined.
Flammability (solid, gas):	Not applicable.
Explosive limit:	Not determined.
Explosive properties.	
• Lower limit:	Not determined.
• Upper limit:	Not determined.
Oxydising properties:	Not determined.
Vapour pressure:	Not determined.
Vapour density:	Not determined.
Density (at 25°C):	Not determined.
Relative density:	Not determined.
Solubility in water:	Not miscible.
Partition Coefficient:	Not determined.
Auto-ignition temperature.	Product is not self-igniting
Decomposition temperature:	Not determined.
Viscosity:	Not determined.

9.1. Informations sur les propriétés physiques et chimiques essentielles

Aspect :	Poudre.
Odeur :	Doux.
Seuil olfactif :	Non déterminé.
Couleur :	Vert.
pH (à 25°C) :	Non déterminé.
Point de fusion :	Non applicable.
Point d'ébullition :	Non déterminé.
Point d'éclair :	Non déterminé.
Taux d'évaporation :	Non déterminé.
Inflammabilité (solide, gaz) :	Non applicable.
Limite d'explosion :	Non déterminé.
Propriétés explosives :	
• Limite inférieure :	Non déterminé.
• Limite supérieure :	Non déterminé.
Propriétés oxydantes :	Non déterminé.
Pression de la vapeur :	Non déterminé.
Densité de la vapeur :	Non déterminé.
Densité (à 25°C) :	Non déterminé.
Densité relative :	Non déterminé.
Solubilité dans l'eau :	Pas miscible.
Coefficient de partition :	Non déterminé.
Température d'auto-ignition :	Ce produit n'est pas auto-inflammable.
Température de décomposition :	Non déterminé.
Viscosité :	Non déterminé.

9.2. Other information

No additional information available.

9.2. Autres informations

Aucune information additionnelle n'est disponible

10 Stability and reactivity / Stabilité et réactivité

10.1. Reactivity

Not determined.

10.1. Réactivité

Non déterminé.

10.2. Chemical stability

No decomposition if used according to specifications.

10.2. Stabilité chimique

Pas de décomposition si utilisée selon les spécifications.

10.3. Possibility of hazardous reactions

None known.

10.3. Possibilité de réactions dangereuses

Aucune connue.

10.4. Conditions to avoid

Avoid extreme heat and naked flames.

10.4. Conditions à éviter

Éviter les températures extrêmes et les flammes nues.

10.5. Incompatible materials

Strong reducing and oxidizing agents.

10.5. Matières incompatibles

Agents réducteurs et oxydants forts.

10.6. Hazardous decomposition products

In case of accidental fire and extreme heat conditions, the following gaseous products can be released: carbon monoxides and dioxides (COx).

10.6. Produits de décomposition dangereux

En cas d'incendie accidentel et de conditions de chaleur extrêmes, les produits gazeux suivants peuvent être libérés: monoxyde de carbone et dioxyde (COx).

11 Toxicological information / Information toxicologique

11.1. Information on toxicological effects

Information on the likely routs of exposure: Skin and eye contact.

Acute toxicity:

Chemical name / Nom du produit chimique	Means of exposure / Moyens d'expositions	Value / Valeur
Dustbane Sweeping Compound (ATE)	LD50 (Oral) LD50 (Dermal)	No information available / Pas d'information disponible No information available / Pas d'information disponible
Sand, crystalline / Sable, cristallin	LD50 (Oral) LD50 (Dermal)	No information available / Pas d'information disponible No information available / Pas d'information disponible

Symptoms related to the physical, chemical and toxicological characteristics:

- If inhaled: No data available.
- If on skin: May cause mild skin irritation.
- If in eyes: Causes eye irritation.
- After ingestion: May cause irritation of the gastrointestinal tract, nausea, vomiting and diarrhea.
- Sensitization: No sensitizing effects known.

Delayed and immediate effects, and chronic effects from short term and long term exposure:

- Prolonged or frequent contact can cause eczema and inflammation of the skins as a result of degreasing.
- Germ cell mutagenicity: No data available.
- Carcinogenicity: No components are listed as carcinogens by IARC, ACGIH, OSHA or NTP.
- Reproductive toxicity: No data available.
- Specific target organ toxicity:
  - Single exposure: No data available.
  - Repeated exposure: No data available.
- Aspiration hazard: No data available.

11.1. Informations sur les effets toxicologiques

Informations sur les voies d'exposition probables: Contact avec la peau et les yeux.

Toxicité aiguë :

Symptômes liés aux caractéristiques physiques, chimiques et toxicologiques :

- En cas d'inhalation : Pas de données disponibles.
- Si sur la peau : Peut causer une légère irritation de la peau.
- Si dans les yeux : Provoquer une irritation.
- Après l'ingestion : Peut provoquer une irritation du tractus gastro-intestinal, des nausées, des vomissements et des diarrhées.
- Sensibilisation : Aucun effet sensibilisant connu.

Effets effets différés et immédiats et chroniques de court terme et de l'exposition à long terme :

- Un contact prolongé ou fréquent peut provoquer de l'eczéma et de l'inflammation la peau en raison de dégraissage.
- Mutagénécité des cellules germinales : Pas de données disponibles.
- Cancérogénicité : Aucun composant n'est répertorié comme carcinogène par le CIRC, l'ACGIH, l'OSHA ou le NTP.
- Toxicité pour la reproduction : Pas de données disponibles.
- Toxicité pour certains organes cibles :
  - Exposition unique : Pas de données disponibles.
  - Exposition répétée : Pas de données disponibles.
- Danger par aspiration : Pas de données disponibles.

12 Ecological information / Informations écologiques

12.1. Toxicity

Ecology:

Chemical name / Nom du produit chimique	Means of exposure / Moyens d'expositions	Value / Valeur

12.1. Toxicité

Écologie :

12.2. Persistence and degradability

Organic components are readily biodegradable.

12.2. Persistance et dégradabilité

Les composants organiques sont facilement biodégradables.

12.3. Bioaccumulative potential

Not available.

12.3. Potentiel de bioaccumulation

Non disponible.

12.4. Mobility in soil

Not available.

12.4. Mobilité dans le sol

Non disponible.

12.5. Other adverse effects

Not available.

12.5. Autres effets adverses

Non disponible.

13 Disposal considerations / Considérations relatives à l'élimination

13.1. Waste treatment methods

Recommendation: Material may be landfilled.

13.1. Méthodes relatives au traitement des déchets

Recommandation : Le matériel peut être mis en décharge.

13.2. Waste from residues / unused products

Recommendation: Dispose in accordance with all applicable federal, state, provincial and local regulations. Contact your local, state, provincial or federal environmental agency for specific rules.

Recommended cleansing agent: Not applicable.

13.2. Élimination des emballages contaminés

Recommandation : L'élimination doit être faite en conformité avec toutes les réglementations fédérales, d'états, provinciales et locales. Contactez votre agence environementale locale, régionale, provinciale ou fédéral pour les règlements spécifiques.

Agent de nettoyage recommandé : Pas applicable.

14 Transport information / Information sur le transport

Product is not regulated as hazardous.

Ce produit n'est pas classifié comme dangereux.

	14.1. UN number / Numéro ONU	14.2. UN proper shipping name / Nom propre pour l'expédition de l'ONU	14.3. Transport hazard class(es) / Classe(s) de danger	14.4. Packing group / Groupe d'emballage	14.5. Environmental hazards / Dangers pour l'environnement
TDG	None / Aucun	Not regulated / Pas règlementé	None / Aucun	None / Aucun	None / Aucun
DOT					

14.6. Special precautions for user

None specified.

14.6. Précautions spéciales pour l'utilisateur

Aucune identifiée.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not available.

14.7. Transport en vrac conformément à l'Annexe II du MARPOL 73/78 et du code IBC

Non disponible.

15 Regulatory information / Renseignements sur la réglementation

15.1. Réglementation

None specified.

15.1. Précautions spéciales pour l'utilisateur

Aucune identifiée.

16 Regulatory information / Renseignements sur la réglementation

Last revision date: 02/02/2017
Preparation date: 02/02/2017

Abbreviations and acronyms:

ACGIH:	American Conference of Governmental Industrial Hygienists
CAS No.:	Chemical Abstract Service (division of the American Chemical Society)
cPs:	Centipoise
D:	Days
DOT:	US Department of Transport
Hr:	Hours
EC50:	Effective Concentration, 50 percent
IC50:	Inhibitory Concentration, 50 percent
LD50:	Lethal Dose, 50 percent
LC50:	Lethal Concentration, 50 percent
IARC:	International Agency for Research on Cancer
IDLH:	Immediately Dangerous to Life or Health
INCI:	International Nomenclature of Cosmetic Ingredients
MSHA:	Mine Safety and Health Administration
NTP:	National Toxicology Program
NOEC:	No Observed Effect Concentration
NOEL:	No Observed Effect Level
NOISH:	US National Institute for Occupational Safety and Health
OSHA:	Occupational Safety and Health Administration
PEL:	Permissible Exposure Limit
PVC:	Polyvinyl chloride
STEL:	Short-Term Exposure Limit
TDG:	Transport Canada Transportation of Dangerous Goods
TWA:	Time Weighted Average
N/A:	Not Applicable

Dernière révision : 02/02/2017
Date de préparation : 02/02/2017

Abréviations et acronymes :

ACGIH :	*American Conference of Governmental Industrial Hygienists*
N° CAS. :	*Chemical Abstract Service (division de l'American Chemical Society)*
CIRC :	Centre international de Recherche sur le Cancer
cPo:	Centipoise
D :	Jours
DIVS :	Danger immédiat pour la vie ou la santé
DOT :	Département des transports É.-U.
H :	Heures
EC50 :	Concentration efficace, 50 pourcent
IC50:	Concentration inhibitrice, 50 pourcent
INCI :	Nomenclature internationale des ingrédients cosmétiques
LD50 :	Dose mortel, 50 pourcent
LC50 :	Concentration mortel, 50 pourcent
MSHA :	*Mine Safety and Health Administration*
NTP :	*National Toxicology Program*
NOEC :	Aucun effet observé concentration
NOEL :	Aucun effet observé niveau
NOISH :	*US National Institute for Occupational Safety and Health*
OSHA :	*Occupational Safety and Health Administration*
PEL :	Limite d'exposition admissible
PVC :	Chlorure de polyvinyle
STEL :	Limite d'exposition à court terme
TDG :	Transport Canada Transport des marchandises dangereuses
TWA :	Durée moyenne pondérée
N/A :	Non applicable

Disclaimer / Statement of liability:

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Bien que les descriptions, les données et les informations contenues dans ce document sont présentées de bonne foi et considérées comme exactes, il est fourni à titre indicatif seulement. Parce que de nombreux facteurs peuvent influer sur le traitement ou l'application / utilisation, nous vous recommandons d'effectuer une évaluation afin de déterminer l'adéquation du produit pour votre usage particulier avant l'utilisation. Rien ici ne doit être interprété comme une recommandation de contrefaire des brevets existants ou d'enfreindre les lois ou règlements. Aucune garantie d'aucune sorte, expresse ou implicite, y compris l'aptitude à un usage particulier n'est faite concernant le produit décrit. Nous déclinons toute responsabilité pour toute blessure résultant d'une mauvaise utilisation ou d'une mauvaise de ce produit ou pourrait être soutenue en raison de l'inhalation, l'ingestion, l'absorption ou tout autre contact avec ce produit. En aucun cas, les légendes, les informations ou les données fournies ne doivent être considérées comme une partie de nos conditions générales de vente. En outre, les descriptions, les données et les informations fournies ci-dessous sont données gratis. Aucune obligation ou responsabilité pour la description, les données et informations fournies sont supposées. Tout comme étant donné et accepté à vos risques.

Safety Data Sheet

1 - Identification

Trade Name: WD-40 Aerosol **Product Use:** Lubricant, Penetrant, Drives Out Moisture, Removes and Protects Surfaces From Corrosion **Restrictions on Use:** None identified **SDS Date Of Preparation:** November 15, 2016	**Canadian Office:** WD-40 Products [Canada] Ltd. P.O. Box 220 Toronto, Ontario M9C 4V3 **Information Phone #:** (416) 622-9881 **Emergency Phone # 24 hr:** Canutec: (613) 996-6666 - Designated for use only in the event of chemical emergencies involving a spill, leak, fire exposure or accident involving chemicals

2 – Hazards Identification

WHMIS 2015/GHS Classification:
Flammable Aerosol Category 1
Gas Under Pressure: Compressed Gas
Aspiration Toxicity Category 1
Specific Target Organ Toxicity Single Exposure Category 3 (nervous system effects)

Note: This product is a consumer product and is labeled in accordance with the Consumer Chemicals and Containers Regulations (CCCR) which take precedence over WHMIS 2015 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.
May cause drowsiness or dizziness.

Prevention
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.
Avoid breathing mist or vapors.
Use only outdoors or in a well-ventilated area.
Response
IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
Call a POISON CENTER or doctor if you fell unwell.
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	WHMIS 2015/ GHS Classification
Aliphatic Hydrocarbon	64742-47-8	50-70%	Flammable Liquid Category 3 Aspiration Toxicity Category 1 Specific Target Organ Toxicity Single Exposure Category 3 (nervous system effects)
Petroleum Base Oil	64742-56-9 64742-65-0 64742-53-6 64742-54-7 64742-71-8	30-35%	Not Hazardous
Carbon Dioxide	124-38-9	2-3%	Simple Asphyxiant

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 irritation. Inhalation of mists or vapors may cause nasal and respiratory tract irritation and central nervous system effects such as headache, dizziness and nausea. 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: 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. Vapors are heavier than air and may travel along surfaces to remote ignition sources and flash back. Combustion will produce oxides of carbon 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
Aliphatic Hydrocarbon	1200 mg/m3 TWA (manufacturer recommended)
Petroleum Base Oil	5 mg/m3 TWA (Inhalable) ACGIH TLV (as mineral oil) 5 mg/m3 TWA, 10 mg/m3 STEL Canada- Québec (as oil mist, mineral) 5 mg/m3 TWA, 10 mg/m3 STEL Canada- Ontario (as oil mist, mineral) 1 mg/m3 TWA British Columbia (as Oil mist-mineral, severely refined)
Carbon Dioxide	5000 ppm TWA, 30000 ppm STEL ACGIH TLV 5000 ppm TWA, 30000 ppm STEL Canada- Ontario 5000 ppm TWA, 30000 ppm STEL Canada- Québec 5000 ppm TWA. 15000 ppm STEL British Columbia

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 applicable regulations and good Industrial Hygiene practice.
Work/Hygiene Practices: Wash with soap and water after handling.

9 – Physical and Chemical Properties

Appearance:	Light amber liquid	Flammable Limits: (Solvent Portion)	LEL: 0.6% UEL: 8%
Odor:	Mild petroleum odor	Vapor Pressure:	95-115 PSI @ 70°F
Odor Threshold:	Not established	Vapor Density:	Greater than 1 (air=1)
pH:	Not Applicable	Relative Density:	0.8 – 0.82 @ 60°F
Melting/Freezing Point:	Not established	Solubilities:	Insoluble in water
Boiling Point/Range:	361 - 369°F (183 - 187°C)	Partition Coefficient; n-octanol/water:	Not established
Flash Point:	122°F (49°C) Tag Open Cup (liquid)	Autoignition Temperature:	Not established
Evaporation Rate:	Not established	Decomposition Temperature:	Not established
Flammability (solid, gas):	Flammable Aerosol	Viscosity:	2.79-2.96 cSt @ 100°F
VOC:	65%	Pour Point:	-63°C (-81.4°F) ASTM D-97

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 oxidizing agents.
Hazardous Decomposition Products: Carbon monoxide and carbon dioxide.

11 – Toxicological Information

Symptoms of Overexposure:
Inhalation: 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: Prolonged and/or repeated contact may produce mild irritation and defatting with possible dermatitis.
Eye Contact: Contact may be irritating to eyes. May cause redness and tearing.
Ingestion: This product has low oral toxicity. Swallowing may cause gastrointestinal irritation, nausea, vomiting and diarrhea. 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:
Acute Toxicity Estimates: Oral > 5,000 mg/kg; Dermal >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: Components are readily biodegradable.
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

Aerosol containers should not be punctured, compacted in home trash compactors or incinerated. Empty containers may be disposed of through normal waste management options. Dispose of all waste product, absorbents, and other materials in accordance with applicable 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)
Canadian TDG Classification: Limited Quantity
IMDG Shipping Description: Un1950, Aerosols, 2.1, LTD QTY
ICAO Shipping Description: UN1950, Aerosols, flammable, 2.1

NOTE: WD-40 Company 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

National Pollutant Release Inventory (NPRI): This product contains the following chemicals that are listed on the NPRI Substance List: Aliphatic Hydrocarbon (64742-47-8) 50-70%

Canadian Environmental Protection Act: All of the ingredients are listed on the Canadian Domestic Substances List or exempt from notification.

16 – Other Information

HMIS Hazard Rating:
Health – 1 (slight hazard), Fire Hazard – 4 (severe hazard), Physical Hazard – 0 (minimal hazard)

Revision Date: November 15, 2016 Supersedes: March 27, 2014

Prepared by: Industrial Health & Safety Consultants, Inc. Shelton, CT, USA

Reviewed by: I. Kowalski Regulatory Affairs Dept.

1014100/No.0084103

WINDSHIELD WASH -40°C

SECTION 1. IDENTIFICATION

Product Identifier	WINDSHIELD WASH -40°C
Other Means of Identification	15-204, 15-204EXP, 15-204LAU, 15-204OEM, 15-204OEMPPK, 15-204OEMPRO, 15-204SUPR, 15-204SUPR-S, 15-215, 15-215OEM, 15-215PAC, 15-215SUPR, 15-216PAC, 15-403SLV, 15-403SLV-PRO, 15-404, 15-408, 25-209, 25-209-1000, 25-209P-1000, 25-209PRMX-1K, 25-219, 35-204ACK, 35-204APR, 35-204BMR, 35-204CERT, 35-204CHR, 35-204CK, 35-204CQ, 35-204CT, 35-204FLS, 35-204H, 35-204LAU, 35-204LUB, 35-204M, 35-204MAC, 35-204MMNO, 35-204PEP, 35-204PM, 35-204QS, 35-204QS-PRO, 35-204QS-PRO1, 35-204RP, 35-204SEL, 35-204SO, 35-204SO-W, 35-204TRP, 35-204U/N, 35-204VIS, 35-204VISEXP, 35-204VOL, 35-204VW, 35-207ARM, 35-207PRES, 35-208SO, 35-209ACK, 35-209ACK-1000, 35-209CHR, 35-209OPW-1K, 35-209QSOPW-1K, 35-209U/N, 35-215ACK, 35-215AS, 35-215AX, 35-215CERT, 35-215H, 35-215LD, 35-215LIFE, 35-215TSC, 35-215UFA, 35-215WM, 35-216WM, 35-219ACK, 35-219ACK-1000, 35-306GP, 35-309OPW-1K, 35-404BMW, 35-404C, 35-404CT, 35-404E, 35-404LIFE, 35-404MER, 35-404PC, 35-404QS, 35-404REF, 35-404STP, 35-404U/N, 35-404UFA, 35-405C, 35-405TSC, 35-408HUS, 35-408SL,, 85-204, 85-209, 85-209-40, BULK-15204, BULK-TRUCK25209, 40W378, 40W205, 40W1000, 35W378, 35W205, 35W1000
Other Identification	WINDSHIELD WASH -45°C, WINDSHIELD WASH -35°C, Tough Guy Windshield WASH -35°C, Tough Guy Windshield WASH -45°C, Tough Guy Windshield WASH -40°C
Recommended Use	Please refer to Product label.
Restrictions on Use	None known.
Manufacturer/Supplier Identifier	Recochem Inc., 850 Montee de Liesse, Montreal, QC, H4T 1P4, Compliance and Regulatory Department, 905-878-5544, www.recochem.com
Emergency Phone No.	CANUTEC, 613-996-6666, 24 Hours
SDS No.	1775

SECTION 2. HAZARD IDENTIFICATION

Classification

Flammable liquid - Category 3; Acute toxicity (Oral) - Category 3; Acute toxicity (Dermal) - Category 3; Acute toxicity (Inhalation) - Category 3; Eye irritation - Category 2B; Reproductive toxicity - Effects on or via lactation; Specific target organ toxicity (single exposure) - Category 1

Label Elements

Signal Word:
Danger

Hazard Statement(s):
H226 Flammable liquid and vapour.

H301 + H311 + H331 Toxic if swallowed, in contact with skin or if inhaled.
H320 Causes eye irritation.
H362 May cause harm to breast-fed children.
H370 Causes damage to organs (eyes, kidneys, liver).

Precautionary Statement(s):
Prevention:
P201 Obtain special instructions before use.
P263 Avoid contact during pregnancy/while nursing.
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233 Keep container tightly closed.
P240 Ground and bond container and receiving equipment.
P241 Use explosion-proof electrical, ventilating, and lighting equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P260 Do not breathe fume, mist, vapours, spray.
P264 Wash hands and skin thoroughly after handling.
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, eye protection.

Response:
P301 + P310 IF SWALLOWED: Immediately call a POISON CENTRE or doctor.
P330 Rinse mouth.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
P312 Call a POISON CENTRE or doctor if you feel unwell.
P361 + P364 Take off immediately all contaminated clothing and wash it before reuse.
P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P312 Call a POISON CENTRE or doctor if you feel unwell.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312 Call a POISON CENTRE or doctor if you feel unwell.
P337 + P313 If eye irritation persists: Get medical advice or attention.
P370 + P378 In case of fire: Use appropriate foam, carbon dioxide, dry chemical powder, water spray or fog to extinguish.

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

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

Other Hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Mixture:

Chemical Name	CAS No.	%	Other Identifiers	Other Names
Methanol	67-56-1	30-60		

Notes

Use of Generic SDS:
If the concentration or actual concentration range of an ingredient of a particular hazardous product in the series is different from the concentration or actual concentration range disclosed for the rest of the series, either the concentration or the actual concentration range must be indicated beside that ingredient under item 3 (Composition/Information on ingredients) of the SDS. Furthermore, if any other specific information element(s) (such as flash point, numerical measure of toxicity, etc.) for a particular hazardous product in the series differs from that of the other products in the series (without affecting the classification), the information element relevant to that hazardous product must be disclosed on the SDS with an indication to which hazardous product each relates.

Source: Health Canada - Technical Guidance on the Requirements of the Hazardous Products Act and the Hazardous Products Regulations WHMIS 2015 Supplier Requirements - pg 117

SECTION 4. FIRST-AID MEASURES

First-aid Measures

Inhalation

Take precautions to ensure your own safety before attempting rescue (e.g. wear appropriate protective equipment). Remove source of exposure or move to fresh air. Keep at rest in a position comfortable for breathing. If breathing has stopped, trained personnel should begin rescue breathing. If the heart has stopped, trained personnel should start cardiopulmonary resuscitation (CPR) or automated external defibrillation (AED). Avoid mouth-to-mouth contact by using a barrier device. Get medical advice or attention if you feel unwell or are concerned.

Skin Contact

Avoid direct contact. Wear chemical protective clothing if necessary. Take off immediately contaminated clothing, shoes and leather goods (e.g. watchbands, belts). Wash gently and thoroughly with lukewarm, gently flowing water and mild soap for 5 minutes. Get medical advice or attention if you feel unwell or are concerned. Thoroughly clean clothing, shoes and leather goods before reuse or dispose of safely.

Eye Contact

Avoid direct contact. Wear chemical protective gloves if necessary. Immediately rinse the contaminated eye(s) with lukewarm, gently flowing water for at least 30 minutes, while holding the eyelid(s) open. If eye irritation persists, get medical advice or attention.

Ingestion

Rinse mouth with water. Never give anything by mouth if person is rapidly losing consciousness, or is unconscious or convulsing. Do not induce vomiting. If vomiting occurs naturally, lie on your side in the recovery position. Rinse mouth with water again. If breathing has stopped, trained personnel should immediately begin rescue breathing. If the heart has stopped, trained personnel should start cardiopulmonary resuscitation (CPR) or automated external defibrillation (AED). Avoid mouth-to-mouth contact by using a barrier device. Immediately call a Poison Centre or doctor. Specific treatment is required.

Most Important Symptoms and Effects, Acute and Delayed

Can cause headache, nausea, vomiting, dizziness, drowsiness and confusion. A severe exposure can cause stomach pain, muscle pain, difficult breathing and coma. Vision can be impaired and permanent blindness can result. There may be other permanent effects on the nervous system e.g. tremor, seizures.

Immediate Medical Attention and Special Treatment

Target Organs

Eyes, liver, nervous system.

Special Instructions

Acute exposure to methanol, either through ingestion or breathing high airborne concentrations can result in symptoms appearing between 40 minutes and 72 hours after exposure. Symptoms and signs are usually limited to CNS, eyes and gastrointestinal tract. Because of the initial CNS's effects of headache, vertigo, lethargy and confusion, there may be an impression of ethanol intoxication. Blurred vision, decreased acuity and photophobia are common complaints. Treatment with ipecac or lavage is indicated in any patient presenting within two hours of ingestion. A profound metabolic acidosis occurs in severe poisoning and serum bicarbonate levels are a more accurate measure of severity than serum methanol levels. Treatment protocols are available from most major hospitals and early collaboration with appropriate hospitals is recommended.

Medical Conditions Aggravated by Exposure

Respiratory conditions.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media

Carbon dioxide, dry chemical powder or appropriate foam. Special "alcohol resistant fire-fighting foams".

Unsuitable Extinguishing Media

Water is not effective for extinguishing a fire. It may not cool product below its flash point.

Specific Hazards Arising from the Product

Highly flammable liquid and vapour. Can ignite at room temperature. Releases vapour that can form explosive mixture with air. Can be ignited by static discharge. Can accumulate static charge by flow, splashing or agitation. Even dilute solutions in water may be flammable. May travel a considerable distance to a source of ignition and flash back to a leak or open container. See Section 9 (Physical and Chemical Properties) for flash point and explosive limits. Burns with an invisible flame. May accumulate in hazardous amounts in low-lying areas especially inside confined spaces, resulting in a fire hazard.
In a fire, the following hazardous materials may be generated: toxic chemicals; very toxic carbon monoxide, carbon dioxide; very toxic, flammable formaldehyde.

Special Protective Equipment and Precautions for Fire-fighters

Review Section 6 (Accidental Release Measures) for important information on responding to leaks/spills.
See Skin Protection in Section 8 (Exposure Controls/Personal Protection) for advice on suitable chemical protective materials.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, and Emergency Procedures

Evacuate the area immediately. Isolate the hazard area. Keep out unnecessary and unprotected personnel. Evacuate downwind locations. Use the personal protective equipment recommended in Section 8 of this safety data sheet. Increase ventilation to area or move leaking container to a well-ventilated and secure area. Eliminate all ignition sources. Use grounded, explosion-proof equipment. May accumulate in hazardous amounts in low-lying areas especially inside confined spaces, if ventilation is not sufficient. Distant ignition and flashback are possible.

Environmental Precautions

Do not allow into any sewer, on the ground or into any waterway.

Methods and Materials for Containment and Cleaning Up

Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. 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 (see section 13). Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

SECTION 7. HANDLING AND STORAGE

Precautions for Safe Handling

Put on appropriate personal protective equipment (see section 8). 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. Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapour or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. 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 non-sparking tools. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate

static electricity during transfer by grounding and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous. Do not reuse container.

Conditions for Safe Storage

Store in accordance with local regulations. Store in a segregated and approved area. 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. Eliminate all ignition sources. Separate from oxidizing materials. 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

	ACGIH TLV®		OSHA PEL		AIHA WEEL	
Chemical Name	**TWA**	**STEL**	**TWA**	**Ceiling**	**8-hr TWA**	**TWA**
Methanol	200 ppm	250 ppm	200 ppm	250 ppm		

Appropriate Engineering Controls

General ventilation is usually adequate. For large scale use of this product: do not allow product to accumulate in the air in work or storage areas, or in confined spaces. Use local exhaust ventilation, if general ventilation is not adequate to control amount in the air. Use non-sparking ventilation systems, approved explosion-proof equipment and intrinsically safe electrical systems in areas where this product is used and stored. Control static electricity discharges which includes bonding of equipment to ground. Use only non-combustible, compatible materials for walls, floors, ventilation system, air cleaning devices, pallets, shelving. Provide safety shower in work area, if contact or splash hazard exists.

Individual Protection Measures

Eye/Face Protection

Wear chemical safety goggles.

Skin Protection

Wear chemical protective clothing e.g. gloves, aprons, boots.
Nitrile rubber.

Respiratory Protection

Not normally required if product is used as directed. For non-routine or emergency situations: wear a NIOSH approved air-purifying respirator with an organic vapour cartridge.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Basic Physical and Chemical Properties

Appearance	Available in these colours: Clear, Yellow, Gold, Red, Blue, Green, Amber, Pink, Orange, Purple, White, Brown.
Odour	Pungent
Odour Threshold	Not available
pH	8 - 11 (100% solution)
Melting Point/Freezing Point	Not available (melting); Not available (freezing)
Initial Boiling Point/Range	Not available
Flash Point	24 - 29 °C (75 - 84 °F) (closed cup)
Evaporation Rate	Not available
Flammability (solid, gas)	Not applicable
Upper/Lower Flammability or Explosive Limit	Not available (upper); Not available (lower)
Vapour Pressure	Not available
Vapour Density (air = 1)	Not available
Relative Density (water = 1)	0.93 - 0.97 at 20 °C
Solubility	Soluble in water; Soluble in all proportions in alcohols (e.g. ethanol).

Partition Coefficient, n-Octanol/Water (Log Kow)	Not available
Auto-ignition Temperature	Not available
Decomposition Temperature	Not available
Viscosity	Not available (kinematic); Not available (dynamic)

Other Information

Physical State	Liquid
Molecular Weight	Not available

SECTION 10. STABILITY AND REACTIVITY

Reactivity

None known.

Chemical Stability

Normally stable.

Possibility of Hazardous Reactions

None known.

Conditions to Avoid

Heat. Open flames, sparks, static discharge, heat and other ignition sources.

Incompatible Materials

Slightly reactive or incompatible with the following materials: oxidizing agents (e.g. peroxides), strong acids (e.g. hydrochloric acid), strong bases (e.g. sodium hydroxide).
Not corrosive to metals.

Hazardous Decomposition Products

Very toxic carbon monoxide, carbon dioxide; very toxic, flammable formaldehyde.

SECTION 11. TOXICOLOGICAL INFORMATION

Likely Routes of Exposure

Ingestion; eye contact; skin contact; inhalation.

Acute Toxicity

Chemical Name	LC50	LDLo - Oral	LD50 (dermal)
Methanol	83867.5 mg/m3 (rat) (4-hour exposure)	143 mg/kg Human - Male	15800 mg/kg (rabbit)

LC50: Not applicable.

LD50 (oral, rat): 5628 mg/kg (14, unconfirmed)
LD50 (oral, 14-day old rat): 5850 mg/kg (cited as 7.4 mL/kg) (15)
LD50 (oral, young adult rat): 10280 mg/kg (cited as 13.0 mL/kg) (15)
LD50 (oral, monkey): 3000 mg/kg (1/1 animal died) (16)

LD50 (dermal): Not applicable.

Skin Corrosion/Irritation

Human experience shows very mild irritation.

Serious Eye Damage/Irritation

Animal tests show serious eye irritation.

STOT (Specific Target Organ Toxicity) - Single Exposure

Inhalation

Toxic, can cause death based on human experience. At high concentrations depression of the central nervous system. Symptoms may include headache, nausea, dizziness, drowsiness and confusion. A severe exposure can

cause unconsciousness.

Skin Absorption

Harmful based on human experience. Can cause effects as described for inhalation. A severe exposure can cause unconsciousness.

Ingestion

Toxic, can cause death depression of the central nervous system, impaired vision and blindness. In some cases, there may be delayed effects on the nervous system. Symptoms may include headache, nausea, vomiting, dizziness, drowsiness and confusion. A severe exposure may cause stomach pain, muscle pain, difficult breathing and coma. Vision can be impaired and permanent blindness can result. There may be other permanent effects on the nervous system e.g. tremor, seizures.

Aspiration Hazard

Not known to be an aspiration hazard.

STOT (Specific Target Organ Toxicity) - Repeated Exposure

If swallowed: liver function tests may show abnormal results. May cause
If inhaled: effects on the central nervous system. Symptoms may include restlessness, reduced ability to think, muscle tremors, memory loss and personality changes.
May cause Following skin contact: dermatitis. Symptoms may include dry, red, cracked skin (dermatitis).

Respiratory and/or Skin Sensitization

Not known to be a respiratory sensitizer. Human experience shows an allergic skin reaction (skin sensitization) in rare cases following exposure at work.

Carcinogenicity

Chemical Name	IARC	ACGIH®	NTP	OSHA
Methanol	Not Listed	Not designated	Not Listed	Not Listed

May cause cancer based on animal studies.

Reproductive Toxicity

Development of Offspring

Animal studies show effects on the offspring. If inhaled: known to cause: decreased weight, birth defects. Teratogenic(external, soft tissue and skeletal defects) embryotoxic (late resorptions).

Sexual Function and Fertility

Not known to cause effects on sexual function or fertility.

Effects on or via Lactation

May cause effects on or via lacation. Can transfer to mother's milk. May cause harm to breastfed babies.

Germ Cell Mutagenicity

Conclusions cannot be drawn from the limited studies available.

Interactive Effects

No information was located.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Acute Aquatic Toxicity

Chemical Name	LC50 Fish	EC50 Crustacea	ErC50 Aquatic Plants	ErC50 Algae
Methanol	15400 mg/L (Lepomis macrochirus (bluegill); 96-hour)	10000 mg/L (Daphnia magna (water flea); 48-hour)		

Chronic Aquatic Toxicity

Chemical Name	NOEC Fish	EC50 Fish	NOEC Crustacea	EC50 Crustacea
Methanol	7900 mg/L (Lepomis macrochirus (bluegill); 200-hrs)			

Persistence and Degradability

Degrades rapidly based on quantitative tests.

Bioaccumulative Potential

This product and its degradation products are not expected to bioaccumulate.

Mobility in Soil

No information was located.

Other Adverse Effects

There is no information available.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal Methods

The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. 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. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14. TRANSPORT INFORMATION

Regulation	UN No.	Proper Shipping Name	Transport Hazard Class(es)	Packing Group
Canadian TDG	1986	ALCOHOLS, FLAMMABLE, TOXIC, N.O.S. (Methanol)	3 (6.1)	III
US DOT	1986	ALCOHOLS, FLAMMABLE, TOXIC, N.O.S. (Methanol)	3 (6.1)	III

Environmental Hazards Not applicable

Special Precautions Please note: In containers of 450L or less, this product meets the requirements for exemption under TDG regulation special provisions, part 1, section 1.36b: Class 3, Flammable liquids: Alcohol Exemption.
In containers of 5 L (5Kg) capacity or less this product is classified as a "Consumer Commodity" under DOT regulations.

Transport in Bulk According to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

Proof of Dangerous Goods Classification

Date of Classification January 12, 2017
Technical Name ALCOHOLS, N.O.S.
Classification 3 (6.1) PG III
Classification Method Flashpoint as per Section 9. LDLo in humans as per Section 11.

SECTION 15. REGULATORY INFORMATION

Safety, Health and Environmental Regulations

Canada

Domestic Substances List (DSL) / Non-Domestic Substances List (NDSL)

All ingredients are listed on the DSL/NDSL.

USA

Toxic Substances Control Act (TSCA) Section 8(b)

All ingredients are listed on the TSCA Inventory.

Additional USA Regulatory Lists

California Proposition 65:
WARNING: Birth Defects and other Reproductive Harm - www.P65Warnings.ca.gov/product.

Custom Regulatory 1

Consumer Product Safety Improvement Act of 2008 General Conformity Certification
The Supplier identified in Section 1 of this MSDS has evaluated this product and certifies it 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, and 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 other testing is required to certify compliance with the above. The date of manufacture is stamped on the product container.

SECTION 16. OTHER INFORMATION

SDS Prepared By	Compliance and Regulatory Department
Phone No.	905-878-5544
Date of Preparation	May 09, 2017
References	CHEMINFO database. Canadian Centre for Occupational Health and Safety (CCOHS).
Additional Information	We are committed to uphold the Industry Consumer Ingredient Communication Voluntary Initiative. Please send us your request by visiting our website at www.recochem.com. Ingredients present (intentionally added ingredients) at a concentration of greater than one percent (1%) shall be listed in descending order of predominance. Ingredients present at a concentration of not more than one percent shall be listed but may be disclosed without respect to order of predominance.
Disclaimer	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

1. Identification

Product identifier	HP LaserJet CF280A-X-XC-XD-XF Print Cartridge
Other means of identification	None.
Recommended use	This product is a toner preparation that is used in HP LaserJet Pro 400 M401, HP LaserJet Pro 400 MFP M425 series printers.
Recommended restrictions	None known.
Manufacturer/Importer/Supplier/Distributor information	
	HP Inc. 1501 Page Mill Road Palo Alto, CA 94304-1112 United States
Telephone	650-857-5020
HP Inc. health effects line	
(Toll-free within the US)	1-800-457-4209
(Direct)	1-760-710-0048
HP Inc. Customer Care Line	
(Toll-free within the US)	1-800-474-6836
(Direct)	1-208-323-2551
Email:	hpcustomer.inquiries@hp.com

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	Not available.
Precautionary statement	
Prevention	Not available.
Response	Not available.
Storage	Not available.
Disposal	Not available.
Hazard(s) not otherwise classified (HNOC)	None of the other ingredients in this preparation are classified as carcinogens according to ACGIH, EU, IARC, MAK, NTP or OSHA.
Supplemental information	This product is not classified as hazardous according to OSHA CFR 1910.1200 (HazCom 2012).

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Polyester resin	Polyester resin	CBI	<55
Iron oxide		1317-61-9	<50
Amorphous silica	Amorphous silica	7631-86-9	<3

4. First-aid measures

Inhalation	Move person to fresh air immediately. If irritation persists, consult a physician.
Skin contact	Wash affected areas thoroughly with mild soap and water. Get medical attention if irritation develops or persists.
Eye contact	Do not rub eyes. Immediately flush with large amounts of clean, warm water (low pressure) for at least 15 minutes or until particles are removed. If irritation persists, consult a physician.
Ingestion	Rinse mouth out with water. Drink one to two glasses of water. If symptoms occur, consult a physician.
Most important symptoms/effects, acute and delayed	Not available.

5. Fire-fighting measures

Suitable extinguishing media	CO2, water, or dry chemical
Unsuitable extinguishing media	None known.
Specific hazards arising from the chemical	Like most organic material in powder form, toner can form explosive dust-air mixtures when finely dispersed in air.
Special protective equipment and precautions for firefighters	Not available.
Fire fighting equipment/instructions	If fire occurs in the printer, treat as an electrical fire.
Specific methods	None established.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Minimize dust generation and accumulation.
Methods and materials for containment and cleaning up	Slowly vacuum or sweep the material into a bag or other sealed container. Clean remainder with a damp cloth or vacuum cleaner. If a vacuum is used, the motor must be rated as dust explosion-proof. Fine powder can form explosive dust-air mixtures. Dispose of in compliance with federal, state, and local regulations.
Environmental precautions	Do not flush into surface water or sanitary sewer system. See also section 13 Disposal considerations.

7. Handling and storage

Precautions for safe handling	Keep out of the reach of children. Avoid inhalation of dust and contact with skin and eyes. Use with adequate ventilation. Keep away from excessive heat, sparks, and open flames.
Conditions for safe storage, including any incompatibilities	Keep out of the reach of children. Keep tightly closed and dry. Store at room temperature. Store away from strong oxidizers.

8. Exposure controls/personal protection

Occupational exposure limits This mixture has no ingredients that have PEL, TLV, or other recommended exposure limit.

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Amorphous silica (CAS 7631-86-9)	TWA	6 mg/m3

Biological limit values No biological exposure limits noted for the ingredient(s).

Exposure guidelines USA OSHA (TWA/PEL): 15 mg/m3 (Total Dust), 5 mg/m3 (Respirable Fraction)

ACGIH (TWA/TLV): 10 mg/m3 (Inhalable Particulate), 3 mg/m3 (Respirable Particulate)

Amorphous silica: USA OSHA (TWA/PEL): 20 mppcf 80 (mg/m3)/%SiO2, ACGIH (TWA/TLV): 10 mg/m3

TRGS 900 (Luftgrenzwert) - 10 mg/m3 (Einatembare partikel), 3 mg/m3 (Alveolengängige fraktion)

Appropriate engineering controls Use in a well ventilated area.

Individual protection measures, such as personal protective equipment

Eye/face protection	Not available.
Skin protection	
Hand protection	Not available.
Other	Not available.
Respiratory protection	Not available.
Thermal hazards	Not available.

9. Physical and chemical properties

Appearance	Fine powder
Physical state	Solid.
Form	solid
Color	Black.
Odor	Slight plastic odor
Odor threshold	Not available.
pH	Not applicable
Melting point/freezing point	Not available.
Initial boiling point and boiling range	Not applicable
Flash point	Not applicable
Evaporation rate	Not applicable
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not flammable
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	Not applicable
Vapor density	Not applicable
Solubility(ies)	
Solubility (water)	Negligible in water. Partially soluble in toluene and xylene.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not applicable
Decomposition temperature	> 392 °F (> 200 °C)
Viscosity	Not applicable
Other information	
Oxidizing properties	No information available.
Percent volatile	Negligible
Softening point	212 - 302 °F (100 - 150 °C)
Specific gravity	1.4 - 1.8
VOC	Not applicable

10. Stability and reactivity

Reactivity	Not available.
Chemical stability	Stable under normal storage conditions.
Possibility of hazardous reactions	Will not occur.
Conditions to avoid	Imaging Drum: Exposure to light
Incompatible materials	Strong oxidizers

Hazardous decomposition products	Carbon monoxide and carbon dioxide.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Under normal conditions of intended use, this material is not expected to be an inhalation hazard.
Skin contact	Contact with skin may result in mild irritation.
Eye contact	Contact with eyes may result in mild irritation.
Ingestion	Ingestion is not a likely route of exposure.
Symptoms related to the physical, chemical and toxicological characteristics	Not available.

Information on toxicological effects

Acute toxicity Based on available data, the classification criteria are not met.

Product	Species	Test Results
CF280A-X-XC-XD-XF		
Acute		
LD50		> 2000 mg/kg

Skin corrosion/irritation	Based on available data, the classification criteria are not met.
Serious eye damage/eye irritation	Based on available data, the classification criteria are not met.

Respiratory or skin sensitization

Respiratory sensitization	Based on available data, the classification criteria are not met.
Skin sensitization	Based on available data, the classification criteria are not met.
Germ cell mutagenicity	Negative, does not indicate mutagenic potential (Ames Test: Salmonella typhimurium) Based on available data, the classification criteria are not met.
Carcinogenicity	Based on available data, the classification criteria are not met.

IARC Monographs. Overall Evaluation of Carcinogenicity

Amorphous silica (CAS 7631-86-9) 3 Not classifiable as to carcinogenicity to humans.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

US. National Toxicology Program (NTP) Report on Carcinogens

Not listed.

Reproductive toxicity	Based on available data, the classification criteria are not met.
Specific target organ toxicity - single exposure	Based on available data, the classification criteria are not met.
Specific target organ toxicity - repeated exposure	Based on available data, the classification criteria are not met.
Aspiration hazard	Based on available data, the classification criteria are not met.
Further information	Complete toxicity data are not available for this specific formulation Refer to Section 2 for potential health effects and Section 4 for first aid measures.

12. Ecological information

Ecotoxicity LL50: > 1000 mg/l, Fish, 96.00 Hours

Product		Species	Test Results
CF280A-X-XC-XD-XF			
Aquatic			
Algae	ErL50	Algae	> 1000 mg/l, 72 Hours
Crustacea	EL50	Crustacea	> 1000 mg/l, 48 Hours
Fish	LL50	Fish	> 1000 mg/l, 96 Hours

Persistence and degradability	Not available.
Bioaccumulative potential	Not available.
Mobility in soil	Not available.

Other adverse effects	Not available.

13. Disposal considerations

Disposal instructions	Do not shred toner cartridge, unless dust-explosion prevention measures are taken. Finely dispersed particles may form explosive mixtures in air. Dispose of in compliance with federal, state, and local regulations. HP's Planet Partners (trademark) supplies recycling program enables simple, convenient recycling of HP original inkjet and LaserJet supplies. For more information and to determine if this service is available in your location, please visit http://www.hp.com/recycle.

14. Transport information

DOT

Not regulated as dangerous goods.

IATA

UN number	UN2807
UN proper shipping name	Magnetized Material
Transport hazard class(es)	
Class	9
Subsidiary risk	-
Packing group	Not available.
Environmental hazards	No.
Special precautions for user	Not available.

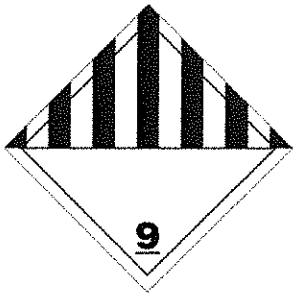
IMDG

Not regulated as dangerous goods.

ADR

Not regulated as dangerous goods.

IATA



Further information	88or more of these cartridges shipped together in a single package (e.g., box, container), by air, are regulated as a magnetized material.

15. Regulatory information

US federal regulations	US EPA TSCA Inventory: All chemical substances in this product comply with all rules or orders under TSCA.

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

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories	Immediate Hazard - No Delayed Hazard - No Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical	No

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.
US state regulations	Not applicable.
Regulatory information	All chemical substances in this HP product have been notified or are exempt from notification under chemical substances notification laws in the following countries: US (TSCA), EU (EINECS/ELINCS), Switzerland, Canada (DSL/NDSL), Australia, Japan, Philippines, South Korea, New Zealand, and China.

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

Issue date	16-Apr-2015
Revision date	05-Sep-2018
Version #	08
Other information	This SDS was prepared in accordance with USA OSHA Hazard Communications regulation (29 CFR 1910.1200).
Disclaimer	This Safety Data Sheet document is provided without charge to customers of HP. Data is the most current known to HP at the time of preparation of this document and is believed to be accurate. It should not be construed as guaranteeing specific properties of the products as described or suitability for a particular application. This document was prepared to the requirements of the jurisdiction specified in Section 1 above and may not meet regulatory requirements in other countries. This safety data sheet is meant to convey information about HP inks (toners) provided in HP Original ink (toner) supplies. If our Safety Data Sheet has been provided to you with a refilled, remanufactured, compatible or other non-HP Original supply please be aware that the information contained herein was not meant to convey information about such products and there could be considerable differences from information in this document and the safety information for the product you purchased. Please contact the seller of the refilled, remanufactured or compatible supplies for applicable information, including information on personal protective equipment, exposure risks and safe handling guidance. HP does not accept refilled, remanufactured or compatible supplies in our recycling programs.
Revision information	Fire-fighting measures: Specific hazards arising from the chemical Accidental release measures: Methods and materials for containment and cleaning up

Explanation of abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS	Chemical Abstracts Service
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
CFR	Code of Federal Regulations
COC	Cleveland Open Cup
DOT	Department of Transportation
EPCRA	Emergency Planning and Community Right-to-Know Act (aka SARA)
IARC	International Agency for Research on Cancer
NIOSH	National Institute for Occupational Safety and Health
NTP	National Toxicology Program
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
RCRA	Resource Conservation and Recovery Act
REC	Recommended
REL	Recommended Exposure Limit
SARA	Superfund Amendments and Reauthorization Act of 1986
STEL	Short-Term Exposure Limit
TCLP	Toxicity Characteristics Leaching Procedure
TLV	Threshold Limit Value
TSCA	Toxic Substances Control Act
VOC	Volatile Organic Compounds

SAFETY DATA SHEET

PURELL® Advanced Hand Sanitizer Gel

Version	Revision Date:	MSDS Number:	Date of last issue: 12/12/2014
1.1	02/10/2015	36779-00002	Date of first issue: 12/12/2014

SECTION 1. IDENTIFICATION

Product name : PURELL® Advanced Hand Sanitizer Gel

Manufacturer or supplier's details

Company name of supplier : GOJO Industries, Inc.

Address : One GOJO Plaza, Suite 500
Akron OH 44311

Telephone : 1 (330) 255-6000

Emergency telephone : 1-800-424-9300 CHEMTREC

Recommended use of the chemical and restrictions on use

Recommended use : Hand Sanitizer

Restrictions on use : This is a personal care or cosmetic product that is safe for consumers and other users under normal and reasonably foreseeable use. Cosmetics and consumer products, specifically defined by regulations around the world, are exempt from the requirement of an SDS for the consumer. While this material is not considered hazardous, this SDS contains valuable information critical to the safe handling and proper use of the product for industrial workplace conditions as well as unusual and unintended exposures such as large spills. This SDS should be retained and available for employees and other users of this product. For specific intended-use guidance, please refer to the information provided on the package or instruction sheet.

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Flammable liquids : Category 3

Eye irritation : Category 2A

GHS Label element

Hazard pictograms :

Signal Word : Warning

Hazard Statements : H226 Flammable liquid and vapor.
H319 Causes serious eye irritation.

Precautionary Statements : **Prevention:**
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P233 Keep container tightly closed.
P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P264 Wash skin thoroughly after handling.
P280 Wear protective gloves/ eye protection/ face protection.
Response:
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313 If eye irritation persists: Get medical advice/ attention.
Storage:
P403 + P235 Store in a well-ventilated place. Keep cool.
Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

Vapors may form explosive mixture with air.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous ingredients

Chemical Name	CAS-No.	Concentration (%)
Ethanol	64-17-5	>= 50 - < 70
Propan-2-ol	67-63-0	>= 1 - < 5

SECTION 4. FIRST AID MEASURES

General advice : In the case of accident or if you feel unwell, seek medical advice immediately.
When symptoms persist or in all cases of doubt seek medical advice.

If inhaled : If inhaled, remove to fresh air.
Get medical attention if symptoms occur.

In case of skin contact : Wash with water and soap as a precaution.
Get medical attention if symptoms occur.

In case of eye contact : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes.
If easy to do, remove contact lens, if worn.

Get medical attention.

If swallowed : If swallowed, DO NOT induce vomiting.
Get medical attention if symptoms occur.
Rinse mouth thoroughly with water.

Most important symptoms and effects, both acute and delayed : Causes serious eye irritation.

Protection of first-aiders : First Aid responders should pay attention to self-protection, and use the recommended personal protective equipment when the potential for exposure exists.

Notes to physician : Treat symptomatically and supportively.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media : Water spray
Alcohol-resistant foam
Dry chemical
Carbon dioxide (CO2)

Unsuitable extinguishing media : High volume water jet

Specific hazards during fire fighting : Do not use a solid water stream as it may scatter and spread fire.
Flash back possible over considerable distance.
Vapors may form explosive mixtures with air.
Exposure to combustion products may be a hazard to health.

Hazardous combustion products : Carbon oxides

Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Use water spray to cool unopened containers.
Remove undamaged containers from fire area if it is safe to do so.
Evacuate area.

Special protective equipment for fire-fighters : In the event of fire, wear self-contained breathing apparatus.
Use personal protective equipment.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Remove all sources of ignition.
Use personal protective equipment.
Follow safe handling advice and personal protective equipment recommendations.

Prevent further leakage or spillage if safe to do so.
Prevent spreading over a wide area (e.g. by containment or oil barriers).
Retain and dispose of contaminated wash water.
Local authorities should be advised if significant spillages cannot be contained.

Methods and materials for containment and cleaning up : Non-sparking tools should be used.
Soak up with inert absorbent material.
Suppress (knock down) gases/vapors/mists with a water spray jet.
For large spills, provide diking or other appropriate containment to keep material from spreading. If diked material can be pumped, store recovered material in appropriate container.
Clean up remaining materials from spill with suitable absorbent.
Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable.
Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.

SECTION 7. HANDLING AND STORAGE

Technical measures : See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.

Local/Total ventilation : Use with local exhaust ventilation.
Use only in an area equipped with explosion proof exhaust ventilation.

Advice on safe handling : Do not breathe vapors or spray mist.
Do not swallow.
Do not get in eyes.
Avoid prolonged or repeated contact with skin.
Handle in accordance with good industrial hygiene and safety practice.
Non-sparking tools should be used.
Keep container tightly closed.
Keep away from heat and sources of ignition.
Take precautionary measures against static discharges.
Take care to prevent spills, waste and minimize release to the environment.

Conditions for safe storage : Keep in properly labeled containers.
Keep tightly closed.
Keep in a cool, well-ventilated place.
Store in accordance with the particular national regulations.
Keep away from heat and sources of ignition.

Materials to avoid : Do not store with the following product types:
Strong oxidizing agents

Organic peroxides
Flammable solids
Pyrophoric liquids
Pyrophoric solids
Self-heating substances and mixtures
Substances and mixtures which in contact with water emit flammable gases
Explosives
Gases

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Ingredients	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Ethanol	64-17-5	TWA	1,000 ppm 1,900 mg/m3	NIOSH REL
		TWA	1,000 ppm 1,900 mg/m3	OSHA Z-1
		STEL	1,000 ppm	ACGIH
Propan-2-ol	67-63-0	TWA	200 ppm	ACGIH
		STEL	400 ppm	ACGIH
		TWA	400 ppm 980 mg/m3	NIOSH REL
		ST	500 ppm 1,225 mg/m3	NIOSH REL
		TWA	400 ppm 980 mg/m3	OSHA Z-1

Biological occupational exposure limits

Ingredients	CAS-No.	Control parameters	Biological specimen	Sam-pling time	Permissible concentration	Basis
Propan-2-ol	67-63-0	Acetone	Urine	End of shift at end of work-week	40 mg/l	ACGIH BEI

Engineering measures : Minimize workplace exposure concentrations.
Use only in an area equipped with explosion proof exhaust ventilation.
Use with local exhaust ventilation.

Personal protective equipment

Respiratory protection : General and local exhaust ventilation is recommended to maintain vapor exposures below recommended limits. Where concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn. Follow OSHA respirator regulations (29 CFR 1910.134) and

use NIOSH/MSHA approved respirators. Protection provided by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection.

Hand protection

Material	:	Impervious gloves
Material	:	Flame retardant gloves
Remarks	:	Choose gloves to protect hands against chemicals depending on the concentration specific to place of work. Breakthrough time is not determined for the product. Change gloves often! For special applications, we recommend clarifying the resistance to chemicals of the aforementioned protective gloves with the glove manufacturer. Wash hands before breaks and at the end of workday.
Eye protection	:	Wear the following personal protective equipment: Safety goggles
Skin and body protection	:	Select appropriate protective clothing based on chemical resistance data and an assessment of the local exposure potential. Wear the following personal protective equipment: Flame retardant antistatic protective clothing. Skin contact must be avoided by using impervious protective clothing (gloves, aprons, boots, etc).
Hygiene measures	:	Ensure that eye flushing systems and safety showers are located close to the working place. When using do not eat, drink or smoke. Wash contaminated clothing before re-use.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	liquid
Color	:	clear, Colorless to pale yellow
Odor	:	citrus
Odor Threshold	:	No data available
pH	:	6.5 - 8.5
Melting point/freezing point	:	No data available
Initial boiling point and boiling range	:	70 °C

Flash point	:	25 °C
Evaporation rate	:	No data available
Flammability (solid, gas)	:	Not applicable
Upper explosion limit	:	No data available
Lower explosion limit	:	No data available
Vapor pressure	:	No data available
Relative vapor density	:	No data available
Density	:	0.8750 g/cm3
Solubility(ies)		
Water solubility	:	soluble
Partition coefficient: n-octanol/water	:	Not applicable
Autoignition temperature	:	No data available
Decomposition temperature	:	The substance or mixture is not classified self-reactive.
Viscosity		
Viscosity, kinematic	:	3,500 - 23,000 mm2/s (20 °C)
Explosive properties	:	Not explosive
Oxidizing properties	:	The substance or mixture is not classified as oxidizing.

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	Not classified as a reactivity hazard.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	Flammable liquid and vapor. Vapors may form explosive mixture with air. Can react with strong oxidizing agents.
Conditions to avoid	:	Heat, flames and sparks.
Incompatible materials	:	Oxidizing agents
Hazardous decomposition products	:	No hazardous decomposition products are known.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure
Inhalation
Skin contact
Ingestion
Eye contact

Acute toxicity

Not classified based on available information.

Product:

Acute oral toxicity	:	Acute toxicity estimate: > 5,000 mg/kg Method: Calculation method

Ingredients:

Ethanol:

Acute oral toxicity	:	LD50 (Rat): > 5,000 mg/kg
Acute inhalation toxicity	:	LC50 (Rat): 124.7 mg/l Exposure time: 4 h Test atmosphere: vapor

Propan-2-ol:

Acute oral toxicity	:	LD50 (Rat): > 5,000 mg/kg
Acute inhalation toxicity	:	LC50 (Rat): 72.6 mg/l Exposure time: 4 h Test atmosphere: vapor
Acute dermal toxicity	:	LD50 (Rat): > 5,000 mg/kg

Skin corrosion/irritation

Not classified based on available information.

Product:

Result: No skin irritation

Ingredients:

Ethanol:
Species: Rabbit
Method: OECD Test Guideline 404
Result: No skin irritation

Propan-2-ol:
Species: Rabbit
Result: No skin irritation

Serious eye damage/eye irritation

Causes serious eye irritation.

Ingredients:

Ethanol:
Species: Rabbit
Result: Irritation to eyes, reversing within 21 days
Method: OECD Test Guideline 405

Propan-2-ol:
Species: Rabbit
Result: Irritation to eyes, reversing within 21 days

Respiratory or skin sensitization

Skin sensitization: Not classified based on available information.
Respiratory sensitization: Not classified based on available information.

Product:

Assessment: Does not cause skin sensitization.

Ingredients:

Ethanol:
Test Type: Local lymph node assay (LLNA)
Routes of exposure: Skin contact
Species: Mouse
Result: negative

Propan-2-ol:
Test Type: Buehler Test
Routes of exposure: Skin contact
Species: Guinea pig
Method: OECD Test Guideline 406
Result: negative

Germ cell mutagenicity

Not classified based on available information.

Ingredients:

Ethanol:

Genotoxicity in vitro	:	Test Type: In vitro mammalian cell gene mutation test Result: negative
Genotoxicity in vivo	:	Test Type: Rodent dominant lethal test (germ cell) (in vivo) Species: Mouse Application Route: Ingestion Result: negative

Propan-2-ol:

Genotoxicity in vitro	:	Test Type: Bacterial reverse mutation assay (AMES) Result: negative
Genotoxicity in vivo	:	Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay) Species: Mouse Application Route: Intraperitoneal injection Result: negative

Carcinogenicity

Not classified based on available information.

Ingredients:

Propan-2-ol:
Species: Rat
Application Route: inhalation (vapor)
Exposure time: 104 weeks
Method: OECD Test Guideline 451
Result: negative

IARC	No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA	No ingredient 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 ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Not classified based on available information.

Ingredients:

Ethanol:

Effects on fertility	:	Test Type: Two-generation reproduction toxicity study Species: Mouse Application Route: Ingestion Method: OECD Test Guideline 416 Result: negative

Propan-2-ol:

Effects on fertility	:	Test Type: Two-generation reproduction toxicity study Species: Rat Application Route: Ingestion Result: negative
Effects on fetal development	:	Test Type: Embryo-fetal development Species: Rat Application Route: Ingestion Result: negative

STOT-single exposure

Not classified based on available information.

Ingredients:

Propan-2-ol:
Assessment: May cause drowsiness or dizziness.

STOT-repeated exposure

Not classified based on available information.

Repeated dose toxicity

Ingredients:

Ethanol:
Species: Rat
NOAEL: 2,400 mg/kg
Application Route: Ingestion
Exposure time: 2 y

Propan-2-ol:
Species: Rat
NOAEL: 5000 ppm
Application Route: inhalation (vapor)
Exposure time: 104 w
Method: OECD Test Guideline 413

Aspiration toxicity

Not classified based on available information.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Ingredients:

Ethanol:

Toxicity to fish	:	LC50 (Pimephales promelas (fathead minnow)): > 1,000 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 1,000 mg/l Exposure time: 48 h
Toxicity to algae	:	EC50 (Chlorella vulgaris (Fresh water algae)): 275 mg/l Exposure time: 72 h Method: OECD Test Guideline 201
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC (Daphnia magna (Water flea)): 9.6 mg/l Exposure time: 9 d
Toxicity to bacteria	:	EC50 (Photobacterium phosphoreum): 32.1 mg/l Exposure time: 0.25 h

Propan-2-ol:

Toxicity to fish	:	LC50 (Pimephales promelas (fathead minnow)): 10,000 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 10,000 mg/l Exposure time: 24 h
Toxicity to algae	:	ErC50 (Scenedesmus quadricauda (Green algae)): > 1,800

Exposure time: 8 d

Toxicity to bacteria : EC50 (Pseudomonas putida): > 1,050 mg/l
Exposure time: 16 h

Persistence and degradability

Ingredients:

Ethanol:
Biodegradability : Result: Readily biodegradable.
Biodegradation: 84 %
Exposure time: 20 d

Propan-2-ol:
Biodegradability : Result: rapidly degradable

Bioaccumulative potential

Ingredients:

Ethanol:
Partition coefficient: n-octanol/water : log Pow: -0.35

Propan-2-ol:
Partition coefficient: n-octanol/water : log Pow: 0.05

Mobility in soil

No data available

Other adverse effects

No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Dispose of in accordance with local regulations.

Contaminated packaging : Dispose of as unused product.
Empty containers should be taken to an approved waste handling site for recycling or disposal.
Do not burn, or use a cutting torch on, the empty drum.

SECTION 14. TRANSPORT INFORMATION

International Regulation

UNRTDG

UN number : UN 1987
Proper shipping name : ALCOHOLS, N.O.S.

(Ethanol, Propan-2-ol)

Class	:	3
Packing group	:	III
Labels	:	3

IATA-DGR

UN/ID No.	:	UN 1987
Proper shipping name	:	Alcohols, n.o.s. (Ethanol, Propan-2-ol)
Class	:	3
Packing group	:	III
Labels	:	Flammable Liquids
Packing instruction (cargo aircraft)	:	366
Packing instruction (passenger aircraft)	:	355

IMDG-Code

UN number	:	UN 1987
Proper shipping name	:	ALCOHOLS, N.O.S. (Ethanol, Propan-2-ol)
Class	:	3
Packing group	:	III
Labels	:	3
EmS Code	:	F-E, S-D
Marine pollutant	:	no

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

Domestic regulation

49 CFR

UN/ID/NA number	:	UN 1987
Proper shipping name	:	ALCOHOLS, N.O.S.
Class	:	3
Packing group	:	III
Labels	:	FLAMMABLE LIQUID
ERG Code	:	127
Marine pollutant	:	no

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : Fire Hazard

Acute Health Hazard

SARA 302 : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : The following components are subject to reporting levels established by SARA Title III, Section 313:

Propan-2-ol	67-63-0	3.4086 %

US State Regulations

Pennsylvania Right To Know

Ethanol	64-17-5	50 - 70 %
Water	7732-18-5	30 - 50 %
Propan-2-ol	67-63-0	1 - 5 %

New Jersey Right To Know

Ethanol	64-17-5	50 - 70 %
Water	7732-18-5	30 - 50 %
Propan-2-ol	67-63-0	1 - 5 %

California Prop 65 This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

The ingredients of this product are reported in the following inventories:

AICS : All ingredients listed or exempt.

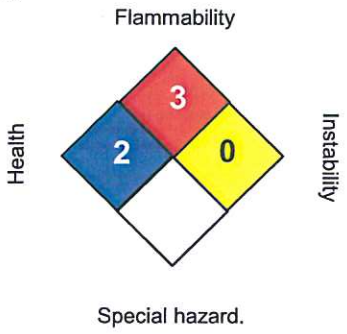
Inventories

AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), NECSI (Taiwan), TSCA (USA)

SECTION 16. OTHER INFORMATION

Further information

NFPA:



HMIS III:

HEALTH	2
FLAMMABILITY	3
PHYSICAL HAZARD	0

0 = not significant, 1 =Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

Full text of other abbreviations

ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
ACGIH BEI	:	ACGIH - Biological Exposure Indices (BEI)
NIOSH REL	:	USA. NIOSH Recommended Exposure Limits
OSHA Z-1	:	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
ACGIH / TWA	:	8-hour, time-weighted average
ACGIH / STEL	:	Short-term exposure limit
NIOSH REL / TWA	:	Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek
NIOSH REL / ST	:	STEL - 15-minute TWA exposure that should not be exceeded at any time during a workday
OSHA Z-1 / TWA	:	8-hour time weighted average
Sources of key data used to compile the Material Safety Data Sheet	:	Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency, http://echa.europa.eu/
Revision Date	:	02/10/2015

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 is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user's end product, if applicable.

Product Name: BIC WITE-OUT® Brand
2 in 1 Correction Fluid

SAFETY DATA SHEET

Date Prepared:
May 22, 2015 Version 6

SECTION 1 – IDENTIFICATION	
Product Name:	BIC WITE-OUT® Brand *2 in 1* Correction Fluid
Synonyms:	WP1 Fluid (Correction Fluid) WP2 Fluid (Correction Fluid)
Product Use:	Correction fluid
Manufacturer/ Vendor Information:	Manufactured for/Distributed by: BIC Corporation One BIC Way, Suite 1 Shelton, CT 06484 USA (203) 783-2000 Emergency Telephone Number: (203) 783-2412 Supplier Information: BIC Inc. 155 Oakdale Road Downsview, Ontario M3N 1W2 CANADA (416) 742-9173 x288 (Business hours)
SDS Contact:	Product Safety
Telephone number:	(203) 783-2124

SECTION 2 – HAZARDS IDENTIFICATION	
This product is a consumer product and is not subject to the requirements of OSHA HCS 2012. Nonetheless, this SDS, including the hazard identification in accordance with HCS/HazCom 2012, is provided for the information of product users.	
Classification in accordance with 29 CFR § 1910.1200:	Flammable Liquid – Category 2 Skin Sensitization – Category 1 Specific Target Organ Toxicity – Single Exposure (STOT-SE) – Category 3 (narcotic effects) Aspiration Hazard – Category 1
Signal Word:	Danger
Hazard Statements:	Highly flammable liquid and vapor. May cause an allergic skin reaction. May cause drowsiness or dizziness May be fatal if swallowed and enters airways
Symbols:	
Precautionary Statements:	<u>Prevention:</u> Avoid breathing vapors. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. Take precautionary measures against static discharge. Use explosion-proof electrical/ventilating/lighting/equipment. Use only non-sparking tools.

	Use only outdoors or in a well-ventilated area. Wear protective gloves/eye protection/face protection. Contaminated work clothing must not be allowed out of the workplace. Response: Do NOT induce vomiting. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If skin irritation or rash occurs: Get medical advice/attention. If swallowed: Immediately call a poison center/doctor. Wash contaminated clothing before reuse. Storage: Store in a well-ventilated place. Keep cool. Store locked up. Disposal: Dispose of contents/container in accordance with local / regional / national / international regulations. 9% of the mixture consists of ingredients of unknown acute dermal toxicity.
Any Hazards Not Otherwise Classified::	None
Consumer Label on the Product:	CAUTION: FLAMMABLE Keep away from fire or flame. Keep away from children. Do not swallow or inhale. WARNING: Intentional misuse by deliberately concentrating and inhaling contents can be harmful or fatal.
For more information refer to Section 11 of this SDS	

SECTION 3 – COMPOSITION/INFORMATION ON INGREDIENTS

Preparation:

CAS No.	Chemical Name	% by Weight
13463-67-7	Titanium dioxide	30-60
64741-66-8	Naphtha (petroleum), light alkylate	15-40
64742-49-0	Naphtha petroleum, hydrotreated light	15-40
162627-17-0	Fatty acids, C18, unsatd., dimers, reaction products with N,N-dimethyl-1,3-propanediamine and 1,3-propanediamine	0.1-1

SECTION 4 – FIRST-AID MEASURES	
Eyes:	Quickly and gently blot or brush away chemical. Flush contaminated eye(s) with lukewarm, gently flowing water for 5 minutes or until the chemical is removed. If irritation occurs, obtain medical advice.
Skin:	If irritation does occur, flush with lukewarm gently flowing water for 5 minutes or until chemical is removed. Remove contaminated clothing, shoes, and leather goods (*e.g.*, watchbands) as the product is highly flammable. If irritation occurs, obtain medical advice.
Inhalation:	If breathing has stopped, trained personnel should begin artificial respiration (AR) or, if the heart has stopped, cardiopulmonary resuscitation (CPR) immediately. Immediately transport victim to an emergency care facility.
Ingestion:	DO NOT INDUCE VOMITING. Aspiration hazard if swallowed. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Transport victim to an emergency care facility if necessary.
Most Important Symptoms and Effects, Both Acute and Delayed	
Symptoms/Injuries after Inhalation:	Deliberately concentrating and inhaling this product can lead to Central Nervous System (CNS) effects, unconsciousness and/or death. Product may be irritating if inhaled accidentally.
Symptoms/Injuries after Skin Contact:	Contact may cause skin sensitization upon repeated or prolonged contact.
Symptoms/Injuries after Eye Contact:	Mild eye irritation may occur if product comes in contact with eyes.
Symptoms/Injuries after Ingestion:	Ingestion of this product may cause CNS depression, symptoms of which may include; weakness, dizziness, slurred speech, drowsiness, unconsciousness and in cases of severe overexposure; coma and death. Ingestion of this product may lead to aspiration of the liquid, especially if vomiting occurs. This may result in chemical pneumonitis (inflammation of the lungs) and/or pulmonary edema (an accumulation of fluid in the lungs).
Indication of Any Immediate Medical Attention and Special Treatment Needed	
Treat symptomatically	

SECTION 5 – FIRE-FIGHTING MEASURES	
Extinguishing Media:	Suitable: CO_2, Foam, Dry Chemical Unsuitable: Water stream or jet
Conditions of Flammability:	HIGHLY FLAMMABLE. Can release vapors that form flammable mixtures at or above the flash point.
Special Firefighting Procedures:	Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.
Hazardous Combustion Products:	Carbon monoxide, carbon dioxide, reactive hydrocarbons, carbonyl compounds, smoke and irritating vapors may be formed on combustion.

SECTION 6 – ACCIDENTAL RELEASE MEASURES	
Personal Precautions:	Highly flammable liquid. Ventilate area.
Methods for Containment and Cleaning Up:	Avoid contaminating sewers, streams, rivers and other watercourses with spilled material. Absorb with inert absorbent material (do not use combustible materials like cloth or paper) and dispose of properly.

SECTION 7 – HANDLING AND STORAGE	
Handling	
Precautions for Safety Handling:	Highly flammable liquid. Avoid contact with skin and eyes. Wash thoroughly after handling this product if in contact with skin. Avoid contact with heat and sources of ignition.
Storage	Store in a cool, dry, well-ventilated area. Store away from incompatible and reactive materials (See Section 10). Keep container tightly closed. Store away from heat and sources of ignition.

SECTION 8 – EXPOSURE CONTROLS/ PERSONAL PROTECTION		
Control parameters		
Chemical Name	CAS Number	Exposure Limits
Titanium dioxide	13463-67-7	ACGIH: (TLV-TWA) 10 mg/m^3 OSHA: (PEL-TWA) 15 mg/m^3
Naphtha, petroleum, hydrotreated light	64742-49-0	ACGIH: (TLV-TWA) 400 ppm ACGIH: (TLV-STEL) 500 ppm OSHA: (PEL-TWA) 500 ppm (Recommended based on a similar product – Heptane)
The selection of personal protective equipment varies, depending upon the conditions of use. Use equipment appropriate to your particular use pattern.		
Engineering Measures:	For normal application, special ventilation is not necessary.	
Eye Protection:	Not required under normal use conditions.	
Hand Protection:	None necessary under normal use conditions.	
Skin and Body Protection:	None necessary under normal use conditions.	
Respiratory Protection:	None necessary under normal use conditions.	

ACGIH = American Conference of Governmental Industrial Hygienists
OSHA = Occupational Safety & Health Administration
PEL = Permissible Exposure Limit
TLV = Threshold Limit Values
TWA = Time-Weighted Average
STEL = Short-Term Exposure Limit

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES	
Appearance & Physical State:	Free flowing white liquid.
Odor:	Petroleum solvent odor
Odor Threshold:	Not Available
pH:	Not Available
Melting Point:	Not Available.
Boiling Point:	95.6-113.9°C (204-237°F)
Flash point:	WP1: -5°C (23°F) (Seta Flash Closed Cup) WP2: 7°C (45°F) (Closed Cup)
Evaporation Rate:	0.89-1.08 (Butyl Acetate=1)
Flammability (solid/gas):	Highly flammable vapors
Flammable Limits in Air Lower (LFL): Upper (UFL):	 1.7% by volume 12.3 % by volume

Vapor Pressure:	26-49 mmHg at 20°C
Vapor Density:	3.4-4.0 (estimated) (air =1)
Density/Specific Gravity:	1.25 (Water =1)
Solubility in Water:	0.1 g/L at 20°C
Octanol/ Water Partition Coefficient	Not Available
Auto-ignition Temperature:	~246.1°C (based on Petroleum Solvent - approximate)
Decomposition Temperature:	Not Available
Viscosity:	Not Available

SECTION 10 – STABILITY AND REACTIVITY	
Reactivity:	This product is stable under the normal conditions of use.
Chemical Stability:	Stable
Possibility of Hazardous Reactions:	Not expected to undergo hazardous polymerization.
Conditions to avoid:	Avoid heat sources, sparks or flames and static discharge.
Incompatible Materials:	Avoid strong oxidizing or reducing agents, strong acids and strong bases.
Hazardous Decomposition Products:	Not expected to undergo decomposition.

SECTION 11 – TOXICOLOGICAL INFORMATION

Routes of Entry: Skin contact, Inhalation, Eye contact, Skin Absorption, Ingestion

Acute Toxicity

Product data:

Route & Species	Value
Oral; rat, LD_{50}	>15 g/kg
Inhalation; rat LC_{50}	90-169.4 mg/L/1H
Dermal, ATE	>5 g/kg

ATE = acute toxicity estimate

Ingredient data:

Chemical	CAS#	Route & Species	Value
Titanium dioxide	13463-67-7	Dermal; rabbit, LD_{50}	>10 000 mg/kg
Naphtha (petroleum), light alkylate	64741-66-8	Dermal; rabbit, LD_{50}	>2000 mg/kg
Naphtha petroleum, hydrotreated light	64742-49-0	Dermal; rabbit, LD_{50}	>3160 mg/kg

Eye Irritation:	Not expected to be an eye irritant based on the results of an *in vitro* ocular tolerance test.
Skin Irritation:	Not expected to be a primary skin irritant based on the results of a human skin patch test and an *in vitro* test.
Ingestion Effects:	Ingestion of this product may cause CNS Depression, symptoms of which may include; weakness, dizziness, slurred speech, drowsiness, unconsciousness

	and in cases of severe overexposure; coma and death. Ingestion of this product may lead to aspiration of the liquid, especially if vomiting occurs. This may result in chemical pneumonitis (inflammation of the lungs) and/or pulmonary edema (an accumulation of fluid in the lungs).
Inhalation Effects:	Deliberately concentrating and inhaling this product can lead to CNS effects, unconsciousness and/or death.
Skin Sensitization:	This product contains a component (at >= 1%) that can cause skin sensitization. Therefore, this product is considered to be a skin sensitizer when handled in bulk. However, the product is packaged in a pen-like applicator, which significantly limits exposure to the product; therefore, it is not expected to pose skin sensitization risk under normal conditions of use.
Respiratory Tract Sensitization:	Contact with this product is not expected to cause respiratory tract sensitization, based upon the available data and the known hazards of the components.
Chronic Toxicity	
Carcinogenicity:	Based on the known hazards of the components, the product is not expected to pose a carcinogenicity risk.
Mutagenicity:	This product is not known to contain any components at >= 0.1% that have been shown to cause mutagenicity. Therefore, based upon the available data and the known hazards of the components, this product is not expected to be a mutagen.
Reproductive Toxicity:	This product is not known to contain any components at >= 0.1% that have been shown to cause reproductive toxicity. Therefore, based upon the available data and the known hazards of the components, this product is not expected to be a reproductive toxin.
Teratogenicity/Embryotoxicity:	This product is not known to contain any components at >= 0.1% that have been shown to cause teratogenicity and/or embryotoxicity. Therefore, based upon the available data and the known hazards of the components, this product is not expected to be a teratogen/embryotoxin.
Other Chronic Effects:	Repeated and chronic product abuse such as deliberately concentrating and inhaling this product can result in adverse effects to the CNS such as drowsiness, dizziness and potentially serious long-term health effects.

SECTION 12 – ECOLOGICAL INFORMATION	
Ecotoxicity:	Not Available
Persistence/ Degradability:	Not Available
Bioaccumulation:	Not Available
Mobility:	Not Available
Other Adverse Effects:	Not Available

SECTION 13 – DISPOSAL CONSIDERATIONS	
Waste Disposal Method:	In accordance with local, provincial/territorial or federal guidelines and regulations

SECTION 14 – TRANSPORT INFORMATION

	Shipping name	UN Number	Hazard Class	PG
DOT (US)	For domestic transport by road, rail and cargo: Proper Shipping Name: Coating solution Product packaged in containers less than 5 liters can be shipped as **Limited quantity** or **Consumer Commodity**	1139	3	II
IMDG	For International transport by cargo vessel, road, rail: Proper shipping name: **Coating Solution** NOTE: Shipped as Limited Quantity	1139	3	II
IATA	For international transport by Air: Proper Shipping Name: **Consumer Commodity**	ID8000	9	

DOT = Department of Transport
IMDG = International Maritime Dangerous Goods
IATA = International Air Transport Association

SECTION 15 – REGULATORY INFORMATION

OSHA Classification: (OSHA Hazard Communication Standard (29 CFR §1910.1200))
This product has been classified in accordance with the hazard criteria of OSHA's HCS/HazCom 2012 and the SDS contains all the information required by the 29 CFR § 1910.1200

Other Hazard Ratings:

	NPCA/HMIS	NFPA 704
Health:	1	1
Flammability:	3	3
Reactivity:	0	0

All the ingredients in the product are listed on the TSCA inventory. This product requires no labeling as per the State of California's Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65). None of the ingredients in this product are Class I or Class II ozone depletors. None of the ingredients in this product are listed as an Extremely Hazardous Substance under the RCRA, SARA 302/313, Clean Air Act, and Clean Water Act.

Regulated under SARA 311/312 Acute: no Chronic: no Fire: no

SECTION 16 – OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

Preparation Date: May 22, 2015
Supersedes Date: February 6, 2013

Disclaimer: The information given is based on data currently available to us and is believed to be correct. No warranty is expressed or implied regarding the accuracy of this data or the results obtained from the use thereof. No responsibility is assumed for injury or damage from the use of the products described herein.

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Revision date: 20/11/2015

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

1.1. Product identifier

Product name : Black Toner for TASKalfa 3500i, 4500i, 5500i, 3501i, 4501i, 5501i

Consumable name : TK-6305
Product form : Mixture

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

Identified uses : The image formation of our electrophotographic equipments.
Other uses are not recommended.

1.3. Details of the supplier of the safety data sheet

Manufacturer : KYOCERA Document Solutions Inc.
Address : 1-2-28 Tamatsukuri, Chuo-ku, Osaka 540-8585, Japan
Supplier : KYOCERA Document Solutions Europe B.V.
Address : Bloemlaan 4, 2132 NP Hoofddorp, The Netherlands
Telephone number : +31(0)20-6540000
E-mail : msds@deu.kyocera.com

1.4. Emergency telephone number

: For safety questions, please contact each sale site during office hours.

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 (CLP)
: Not classified as hazardous mixture.

2.2. Label elements

Labelling according to Regulation (EC) No 1272/2008 (CLP)
: Not applicable.

2.3. Other hazards

Assessment of PBT/vPvB : No data available.

See section 4 and 11 for information on health effects and symptoms.
See section 9 for dust explosion information.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Chemical name	Identifier CAS No.	Weight%
Polyester resin	Confidential	65-75
Carbon black	1333-86-4	5-10
Ferrite (Ferrite including manganese)	66402-68-4	1-10 (as Mn: < 2)
Amorphous silica	7631-86-9	1-5
Titanium dioxide	13463-67-7	< 1

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Information of Ingredients

(1) Substance which present a health or environmental hazard within the meaning of CLP
: None.

(2) Substance which are assigned Community workplace exposure limits
: None.

(3) Substance which are PBT or vPvB in accordance with the criteria set out in Annex XIII of REACH
: None.

(4) Substance which are included in the list established in accordance with Article 59(1) of REACH (SVHC)
: None.

See section 16 for the full text of the H statements declared above.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation : Remove from exposure to fresh air and gargle with plenty of water. Consult a doctor in case of such symptoms as coughing.

Skin Contact : Wash with soap and water.

Eye Contact : Flush with water immediately and see a doctor if irritating.

Ingestion : Rinse out the mouth. Drink one or two glasses of water to dilute. Seek medical treatment if necessary.

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

Potential health effects and symptoms

Inhalation : Prolonged inhalation of excessive dusts may cause lung damage. Use of this product as intended does not result in prolonged inhalation of excessive toner dusts.

Skin contact : Unlikely to cause skin irritation.

Eye contact : May cause transient eye irritation.

Ingestion : Use of this product as intended does not result in ingestion.

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

: No additional information available.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Water spray, foam, powder, CO_2 or dry chemical.

Unsuitable extinguishing media : None specified.

5.2. Special hazards arising from the substance or mixture

Hazardous combustion products : Carbon dioxide. Carbon monoxide.

5.3. Advice for firefighters

Fire-fighting procedures : Pay attention not to blow away dust. Drain water off around and decrease the atmosphere temperature to extinguish the fire.

Protective equipment for firefighters : None specified.

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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

: Avoid inhalation, ingestion, eye and skin contact in case of accidental release.
Avoid formation of dust. Provide adequate ventilation.

6.2. Environmental precautions

: Do not allow to enter into surface water or drains.

6.3. Methods and material for containment and cleaning up

Method for cleaning up : Gather the released powder not to blow away and wipe up with a wet cloth.

6.4. Reference to other sections

See section 13 for disposal information.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

: Do not attempt to force open or destroy the toner container or unit.
See installation guide of this product.

7.2. Conditions for safe storage, including any incompatibilities

: Keep the toner container or unit tightly closed and store in a cool, dry and dark place keeping away from fire. Keep out of the reach of children.

7.3. Specific end use(s)

: No additional information available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

(Reference data)

US ACGIH Threshold Limit Values (TWA)

Particles: 10 mg/m³ (Inhalable particles), 3 mg/m³ (Respirable particles)
Carbon black: 3.5 mg/m³
Manganese compounds (Ferrite component): 0.2 mg/m³ (as Mn)
Titanium dioxide: 10 mg/m³

US OSHA PEL (TWA)

Particles: 15 mg/m³ (Total dust), 5 mg/m³ (Respirable fraction)
Carbon black: 3.5 mg/m³
Manganese compounds (Ferrite component): 5 mg/m³ (Ceiling) (as Mn)
Amorphous silica: 80 mg/m³/%SiO_2
Titanium dioxide: 15 mg/m³ (Total dust)

EU Occupational exposure limits : Directive 2000/39/EC, 2006/15/EC and 2009/161/EU

Not listed.

8.2. Exposure controls

Appropriate engineering controls : Special ventilator is not required under normal intended use.
Use in a well ventilated area.

Personal protective equipment : Respiratory protection, eye protection, hand protection, skin and body protection are not required under normal intended use.

Environmental exposure controls : No additional information available.

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SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance		
Physical state	: Solid. (Fine powder)	
Color	: Black.	
Odor	: Odorless.	
Odor threshold	: No data available.	
pH	: No data available.	
Melting point	: 100-120 °C	(Toner)
Boiling point	: No data available.	
Flash point	: No data available.	
Evaporation rate	: No data available.	
Flammability (solid, gas)	: No data available.	
Upper/lower flammability or explosive limits	: No data available.	
Vapour pressure	: No data available.	
Vapour density	: No data available.	
Relative density	: 1.2-1.4 g/㎤	(Toner)
Solubility(ies)	: Almost insoluble in water.	
Partition coefficient: n-octanol/water	: No data available.	
Auto-ignition temperature	: No data available.	
Decomposition temperature	: No data available.	
Viscosity	: No data available.	
Explosive properties	: No data available.	
Oxidising properties	: No data available.	

9.2. Other information

Dust explosion properties : Dust explosion is improbable under normal intended use.
Experimental explosiveness of toner is classified into the same rank such kind of powder as flour, dry milk and resin powder according to the pressure rising speed.

SECTION 10: Stability and reactivity

10.1. Reactivity : No data available.

10.2. Chemical stability : This product is stable under normal conditions of use and storage.

10.3. Possibility of hazardous reactions

: Hazardous reactions will not occur.

10.4. Conditions to avoid : None specified.

10.5. Incompatible materials : None specified.

10.6. Hazardous decomposition products

: Hazardous decomposition products are not to be produced.

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SECTION 11: Toxicological information

11.1. Information on toxicological effects

Based on available data, the classification criteria listed below are not met.

Acute toxicity

Oral (LD_{50}) : > 2000 mg/kg (rat)
(Based on test result of similar product.) (Toner)
> 2500 mg/kg (rat)
(Based on test result of constituent materials.) (Carrier)

Dermal (LD_{50}) : No data available.
(Toner)
> 2000 mg/kg (rat)
(Based on test result of constituent materials.) (Carrier)

Inhalation (LC_{50} (4hr)) : > 5.0 mg/l (rat)
(Based on test result of similar product.) (Toner)

Skin corrosion/irritation

Acute skin irritation : Non-irritant (rabbit)
(Based on test result of similar product.) (Toner)
Non-irritant (rabbit)
(Based on test result of constituent materials.) (Carrier)

Serious eye damage/irritation

Acute eye irritation : Minimal irritant (rabbit)
(Based on test result of similar product.) (Toner)

Respiratory or skin sensitisation

Skin sensitisation : Non-sensitiser (mouse)
(Based on test result of similar product.) (Toner)
Non-sensitiser (guinea pig)
(Based on test result of constituent materials.) (Carrier)

Germ cell mutagenicity

: Ames Test is Negative.
(Toner)
Ames Test is Negative.
(Based on test result of constituent materials.) (Carrier)

Information of Ingredients : No mutagen, according to MAK, TRGS905 and (EC) No 1272/2008 Annex VI.

Carcinogenicity

Information of Ingredients : No carcinogen or potential carcinogen according to IARC, Japan Association on Industrial Health, ACGIH, EPA, OSHA, NTP, MAK, California Proposition 65, TRGS 905 and (EC) No 1272/2008 Annex VI.

(except carbon black and titanium dioxide)
The IARC reevaluated carbon black and titanium dioxide as a Group 2B carcinogen (possibly carcinogenic to humans) as the result of inhalation exposure test in rats. But, oral/skin test does not show carcinogenicity. (*2)
The evaluation of carbon black is based upon the development of lung tumors in rat receiving chronic inhalation exposures to free carbon black at level that induce particle overload of the lung.
The studies performed in animal models other than rats have not demonstrated an association between carbon black and lung tumors. Moreover, a two-years cancer bioassay using a typical toner preparation containing carbon black demonstrated no association between toner exposure and tumor development in rats. (*1)
In the animal chronic inhalation studies for titanium dioxide, the lung tumor was observed in only rats. It is estimated that this is attributed to the overload of rat's lung clearance mechanism (overload phenomenon). (*3)
The inhalation of excessive titanium dioxide dose not occur in normal use of this product. Also, epidemiological studies to date have not revealed any evidence of the relation between occupational exposure to titanium dioxide and respiratory tract diseases.

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Reproductive toxicity

Information of Ingredients : No reproductive toxicant according to MAK, California Proposition 65, TRGS905 and (EC) No 1272/2008 Annex VI.

STOT-single exposure : No data available.

STOT-repeated exposure : No data available.

Aspiration hazard : No data available.

Chronic effects : In a study in rats by chronic inhalation exposure to a typical toner, a mild to moderate degree of lung fibrosis was observed in 92% of the rats in the high concentration (16 mg/m³) exposure group, and a minimal to mild degree of fibrosis was noted in 22% of the animal in the middle (4 mg/m³) exposure group. (*1)
But no pulmonary change was reported in the lowest (1 mg/m³) exposure group, the most relevant level to potential human exposures.

Other information : No data available.

SECTION 12: Ecological information

12.1. Toxicity : No data available.

12.2. Persistence and degradability : No data available.

12.3. Bioaccumulative potential : No data available.

12.4. Mobility in soil : No data available.

12.5. Results of PBT and vPvB assessment : No data available.

12.6. Other adverse effects : No additional information available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

: Do not attempt to incinerate the toner container or unit and the waste toner yourself.
Dangerous sparks may cause burn. Any disposal practice should be done under conditions which meet local, state and federal laws and regulations relating to waste (contact local or state environmental agency for specific rules).

SECTION 14: Transport information

14.1. UN number : None.

14.2. UN proper shipping name : None.

14.3. Transport hazard class(es) : None.

14.4. Packing group : None.

14.5. Environmental hazards : None.

14.6. Special precautions for user : No additional information available.

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code : Not applicable.

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SECTION 15: Regulatory information

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

EU regulations

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer, Annex I and Annex II
: Not listed.

Regulation (EC) No 850/2004 on persistent organic pollutants, Annex I as amended
: Not listed.

Regulation (EC) No 689/2008 concerning the export and import of dangerous chemicals, Annex I and Annex V as amended
: Not listed.

Regulation (EC) No 1907/2006, REACH Annex XVII as amended (Restrictions on use)
: Not listed.

Regulation (EC) No 1907/2006, REACH Annex XIV as amended (Authorisations)
: Not listed.

US regulations

All ingredients in this product comply with order under TSCA.

Canada regulations

This product is not a WHMIS-controlled product, since we consider it as a Manufactured article.

15.2. Chemical safety assessment

: No data available.

SECTION 16: Other information

To the best of our knowledge, the information contained herein is accurate. However, we cannot assume any liability whatsoever for the accuracy or completeness of the information contained herein.
The contents and format of this SDS are in accordance with Regulation (EC) No 1907/2006, Annex II as amended by Regulation (EU) No 453/2010 with respect to SDSs.

Revision information	: Format change.
Version	: 05
Full text of H statements under sections 3.	: Not applicable.

Abbreviations and acronyms

PBT	: Persistent, Bioaccumulative and Toxic
vPvB	: Very Persistent and Very Bioaccumulative
SVHC	: Substances of Very High Concern
CAS	Chemical Abstracts Service
ACGIH	: American Conference of Governmental Industrial Hygienists 2010 TLVs and BEIs (Threshold Limit Values for Chemical Substances and Physica Agents and Biological Exposure Indices)
OSHA	: Occupational Safety and Health Administration (29 CFR Part 1910 Subpart Z)
TWA	: Time Weighted Average
PEL	: Permissible Exposure Limits
UN	: United Nations
IARC	: International Agency for Research on Cancer (IARC Monographs on the Evaluations of Carcinogenic Risks to Humans)
EPA	: Environmental Protection Agency (Integrated Risk Information System) (US)
NTP	: National Toxicology Program (Report on Carcinogens) (US)
MAK	: Maximale Arbeitsplatz-Konzentrationen (List of MAK and BAT Values 2011) (DFG: Deutsche Forschungsgemeinschaft)
Proposition 65	: California, Safe Drinking Water and Toxic Enforcement Act of 1986

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TSCA	:	Toxic Substances Control Act (US)
WHMIS	:	Workplace Hazardous Materials Information System (Canada)
REACH	:	Regulation (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals
CLP	:	Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures

Key literature references and sources for data

(*1) Pulmonary Response to Toner upon Chronic Inhalation Exposure in Rats H.Muhle et.al Fundamental and Applied Toxicology 17.280-299(1991)

Lung Clearance and Retention of Toner, Utilizing a Tracer Technique, during Chronic Inhalation Exposure in Rats B.Bellmann Fundamental and Applied Toxicology 17.300-313(1991)

(*2) IARC Monograph on the Evaluation of the Carcinogenic Risk of Chemicals to Humans, Vol.93

(*3) NIOSH CURRENT INTELLIGENCE BULLETIN "Evaluation of Health Hazard and Recommendation for Occupational Exposure to Titanium Dioxide DRAFT"