Aetna Bridge Company

# S D S
# ( SAFETY DATA SHEETS)

- Please keep this binder in your possession or in your Aetna Bridge Company truck at all times.
- Update this binder when SDS sheets are sent to you.
- Request SDS sheets for any potential hazardous materials that you are using/have on hand, if they are not in this binder.
- If this binder or its contents are damaged or to request SDS sheets, please contact:


Safety Director
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Aetna Bridge Company

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# SAFETY DATA SHEET

HARSCO METALS & MINERALS

**Date Prepared :** 04/02/2015
**SDS No :** 2014-04
**Date Revised :** 09/09/2015
**Revision No :** 4

## 1. PRODUCT AND COMPANY IDENTIFICATION

**GENERAL USE:** Abrasives, roofing products and other aggregate uses
**PRODUCT DESCRIPTION:** BLACK BEAUTY®
**PRODUCT CODE:** Coal-Fired Boiler Slag
**PRODUCT FORMULATION NAME:** Abrasive
**GENERIC NAME:** BLACK BEAUTY®

**MANUFACTURER**

Harsco Corporation
Metals & Minerals
5000 Ritter Road
Suite 205
Mechanicsburg, PA 17055
**Emergency Contact:** EHS Manager
**Emergency Phone:** 717-506-4666
**Alternate Emergency Phone:** 888-733-3646
**E-Mail:** reedcs@harsco.com

**24 HR. EMERGENCY TELEPHONE NUMBERS**

855-393-9889
Access Code 13793

## 2. HAZARDS IDENTIFICATION

### GHS CLASSIFICATIONS

**Health:**

Not Classified.

**Environmental:**

Not Classified.

**Physical:**

Not Classified.

### EMERGENCY OVERVIEW

**PHYSICAL APPEARANCE:** Solid

**IMMEDIATE CONCERNS:** BLACK BEAUTY® is not flammable, combustible or explosive; and poses no unusual hazard in an unused condition. During use for abrasive blasting, dust may irritate the respiratory tract, skin and eyes; and may cause inflammation and pulmonary fibrosis.

## 3. COMPOSITION / INFORMATION ON INGREDIENTS

| Chemical Name | Wt.% | CAS |
|---|---|---|
| Silica, Amorphous | 40 - 53 | 60676-86-0 |
| Aluminum Oxide | 17 - 25 | 1344-28-1 |
| Iron Oxide | 5 - 31 | 1309-37-1 |
| Calcium Oxide | 3 - 20 | 1305-78-8 |
| Magnesium Oxide | 0.1 - 7 | 1309-48-4 |
| Potassium Oxide | 0.1 - 3 | 12136-45-7 |
| Titanium Dioxide | 0.1 - 2 | 13463-67-7 |
| Silica, Crystalline | < 0.1 | 14808-60-7 |
| Manganese | 0.01 - 0.05 | 7439-96-5 |
| Beryllium | 0 - 0.001 | 7440-41-7 |
| Cadmium | 0 - 0.001 | 7440-43-9 |

## 4. FIRST AID MEASURES

**EYES:** Do not rub eyes. Remove contact lenses. Flush eyes thoroughly with water, taking care to rinse under eyelids. If irritation continues, continue flushing for 15 minuites, rinsing from time to time under the eyelids. If discomfort continues, consult a physician.

**SKIN:** Wash with soap and water. Get medical attention if irritation develops or persists.

**INGESTION:** Rinse mouth thoroughly if ingested. Do not induce vomiting. If discomfort continues, consult a physician.

**INHALATION:** Move to fresh air. If discomfort continues, consult a physician.

**NOTES TO PHYSICIAN:** Treat symptomatically.

**COMMENTS:** Show this Safety Data Sheet to physician in attendance.

## 5. FIRE FIGHTING MEASURES

**FLAMMABLE CLASS:** This product is non-combustible.

**GENERAL HAZARD:** None known

**EXTINGUISHING MEDIA:** Use fire-extinguishing media appropriate for surrounding materials.

**FIRE FIGHTING PROCEDURES:** Move product containers from fire area if it can be done without risk. Cool containers by flooding with water until heat is dissipated.

**HAZARDOUS DECOMPOSITION PRODUCTS:** None known

## 6. ACCIDENTAL RELEASE MEASURES

**LARGE SPILL:** Avoid runoff into storm sewers and ditches that lead to waterways. Collect spillage using a vacuum equipped with a HEPA filter. If not possible, gently moisten before collecting with shovel and broom. Dispose of collected materials inaccordance with Federal, State and local regulations.

**GENERAL PROCEDURES:** Never return spillage and clean-up materials to original product containers.

**RELEASE NOTES:** In the unused form, the material is non-hazardous as defined in state and federal regulations.

**COMMENTS:** Ensure clean-up is conducted by trained personnel wearing appropriate respiratory protection. Avoid inhalation of dust and contact with skin and eyes. Ventilate area if there is excessive airborne dust.

## 7. HANDLING AND STORAGE

**GENERAL PROCEDURES:** Avoid inhalation of dust and contact with skin and eyes. Use only with adequate venitilation. Use work methods that minimize dust production. Keep workplace clean. Observe good industrial hygiene practices.

**HANDLING:** Follow Safety Data Sheet and label precautions.

**STORAGE:** Keep container tightly closed. Store away from incompatible materials.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**EXPOSURE GUIDELINES**

| OSHA HAZARDOUS COMPONENTS (29 CFR1910.1200) | | | | | |
|---|---|---|---|---|---|
| | | EXPOSURE LIMITS | | | |
| | | OSHA PEL | | ACGIH TLV | |
| **Chemical Name** | | **ppm** | **mg/m³** | **ppm** | **mg/m³** |
| Silica, Amorphous | **TWA** | 20 mpp [1] | 80 / $\%SiO_2$ [1] | [2] | 10 [2] |
| Aluminum Oxide | **TWA** | [3] | 15 [3] | | 1 R as aluminum metal |
| Iron Oxide | **TWA** | | 10 as iron oxide fume | | 5 |
| Calcium Oxide | **TWA** | | 5 | | 2 |
| Magnesium Oxide | **TWA** | | 15 as magnesium oxide fume | | 10 I |
| Titanium Dioxide | **TWA** | | 15 | | 10 |
| Silica, Crystalline | **TWA** | [4] | 10 / ($\%SiO_2$ + 2) [4] | | 0.025 R |
| Manganese | **TWA** | | | | 0.2 |

**Footnotes:**
**1**. mpp is millions of particles per $ft^3$
**2**. ACGIH TLV for Particles Not Otherwise Specified is 10 $mg/m^3$ for inhalable particles and 3 $mg/m^3$ for respirable particles.
**3**. PEL is 15 $mg/m^3$ total dust and 5 $mg/m^3$ respirable particles (as aluminum metal)
**4**. Respirable PEL = 10 $mg/m^3$ / ($\%SiO_2$ + 2) and Total Dust PEL = 30 $mg/m^3$ / ($\%SiO_2$ + 2)

**ENGINEERING CONTROLS:** Use process enclosures, local exhaust ventilation or other engineering controls to keep airborne levels below recommended exposure limits.

**PERSONAL PROTECTIVE EQUIPMENT**

**EYES AND FACE:** Wear safety glasses with side shields. Use tight fitting googles if dust is generated.

**SKIN:** Use protective gloves. Wear suitable protective clothing.

**RESPIRATORY:** Selection and use of respiratory protective equipment should be in accordance with OSHA General Industry Standard 29 CFR 1910.134; or in Canada with CSA Standard Z94.4.

**WORK HYGIENIC PRACTICES:** Wash hands after handling. Routinely wash work clothing and protective equipment. Handle in accordance with good industrial hygiene and safety practice.

**COMMENTS:** Proper and safe use of the material is solely the purchaser's responsibility. The manufacturer extends no warranties and makes no representations as to the suitability of the product for the purchaser's intended purpose or the consequences of purchaser's actions.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**ODOR:** None

**APPEARANCE:** Black, granular solid

**COLOR:** Black

**pH:** 8.2

**FLASH POINT AND METHOD:** Not Available

**FLAMMABLE LIMITS:** Not available

**VAPOR PRESSURE:** Not Available

**VAPOR DENSITY:** Not Available

**BOILING POINT:** Not Available

**FREEZING POINT:** Not Available

**MELTING POINT:** Not Available

**SOLUBILITY IN WATER:** None Expected

**SPECIFIC GRAVITY:** 2.6 - 2.8

**VISCOSITY:** Not Available

**COMMENTS:** For additional information contact manufacturer.

## 10. STABILITY AND REACTIVITY

**STABILITY:** This product is stable and non-reactive under normal conditions of use, storage and transport.

**CONDITIONS TO AVOID:** None known

**POSSIBILITY OF HAZARDOUS REACTIONS:** None

**HAZARDOUS DECOMPOSITION PRODUCTS:** None known

**INCOMPATIBLE MATERIALS:** Hydrofluoric acid

## 11. TOXICOLOGICAL INFORMATION

**ACUTE**

**NOTES:** Abrasive blasting agents may cause inflammation and pulmonary fibrosis. Ingestion of dusts generated during working operations may cause nausea and vomiting.

**EYE EFFECTS:** May cause eye irritation.

**SKIN EFFECTS:** May cause skin irritation.

**CHRONIC:** Frequent inhalation of dust over a long period of time increases the risk of developing lung diseases.

**CARCINOGENICITY**

**IARC:** Coal-Fired boiler slag is not listed by IARC.

**NTP:** Coal-Fired boiler slag is not listed by the National Toxicology Program in their Annual Report.

**OSHA:** Coal-Fired boiler slag is not listed by NIOSH on their Occupational Cancer List.

**Notes:**

**ACGIH Carcinogens**

- Aluminum oxide (CAS 1344-28-1) A4 Not classifiable as a human carcinogen.
- Beryllium (CAS 7440-41-7) A1 Confirmed human carcinogen.
- Cadmium (CAS 7440-43-9) A2 Suspected human carcinogen.
- Calcium oxide (CAS 1305-78-8) No designation listed.
- Iron oxide (CAS 1309-37-1) A4 Not classifiable as a human carcinogen.
- Magnesium oxide (CAS 1309-48-4) A4 Not classifiable as a human carcinogen.
- Manganese (CAS 7439-96-5) A4 Not classifiable as a human carcinogen.
- Potassium oxide (CAS 12136-45-7) No designation listed.
- Silica, amorphous (CAS 7631-86-9) No designation listed.

- Titanium dioxide (CAS 13463-67-7) A4 Not classifiable as a human carcinogen.

**IARC Monographs. Overall Evaluation of Carcinogenicity**

- Aluminum oxide (CAS 1344-28-1) Not listed.
- Beryllium (CAS 7440-41-7) Group 1. Monographs 58 and 100C (2012).
- Cadmium (CAS 7440-43-9) Group 1. Monographs 58 and 100C (2012).
- Calcium oxide (CAS 1305-78-8) Not listed.
- Iron oxide (CAS 1309-37-1) Not listed.
- Magnesium oxide (CAS 1309-48-4) Not listed.
- Manganese (CAS 7439-96-5) Not listed.
- Potassium oxide (CAS 12136-45-7) Not listed.
- Silica, amorphous (CAS 7631-86-9) Not listed.
- Titanium dioxide (CAS 13463-67-7) Group 2B. Monographs 47 and 93 (2010).

**US NTP Report on Carcinogens**

- Beryllium (CAS 7440-41-7) Known to be a human carcinogen.
- Cadmium (CAS 7440-43-9) Known to be a human carcinogen.

**CORROSIVITY:** None known

**SENSITIZATION:** Not a skin or respiratory sensitizer.

**NEUROTOXICITY:** None known

**GENETIC EFFECTS:** None known

**REPRODUCTIVE EFFECTS:** None known

**TARGET ORGANS:** Irritation of nose and throat. Irritation of eyes and mucous membranes. May cause respiratory tract irritation. Shortness of breath.

**TERATOGENIC EFFECTS:** None known

**MUTAGENICITY:** None known

**COMMENTS:** Although manufacturer has taken reasonable care in the preparation of this Safety Data Sheet, no warranties are made. Manufacturer makes no representations and assumes no responsibility as to the accuracy or suitability of the Safety Data Sheet for the applications intended by the purchaser.

## 12. ECOLOGICAL INFORMATION

**ENVIRONMENTAL DATA:** An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

**ECOTOXICOLOGICAL INFORMATION:** This product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**BIOACCUMULATION/ACCUMULATION:** This product is not bioaccumulating.

**DISTRIBUTION:** Not available

**AQUATIC TOXICITY (ACUTE):** None known

**CHEMICAL FATE INFORMATION:** Not available

## 13. DISPOSAL CONSIDERATIONS

**DISPOSAL METHOD:** Dispose in accordance with all applicable regulations.

**GENERAL COMMENTS:** TCLP testing of unused product indicates that it is not hazardous waste by characteristic.

## 14. TRANSPORT INFORMATION

**DOT (DEPARTMENT OF TRANSPORTATION)**

**OTHER SHIPPING INFORMATION:** Unused product is not regulated as a hazardous material by DOT.

**COMMENTS:** Unused product is not regulated as dangerous goods by the International Air Transport Association (IATA), International Maritime Dangerous Goods (IMDG) or Transport Canada (TDG).

## 15. REGULATORY INFORMATION

**UNITED STATES**

**SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)**

**311/312 HAZARD CATEGORIES:** Hazardous Chemical.

**FIRE:** No **PRESSURE GENERATING:** No **REACTIVITY:** No **ACUTE:** No **CHRONIC:** Yes

**313 REPORTABLE INGREDIENTS:** Aluminum oxide (CAS 1344-28-1)

**302/304 EMERGENCY PLANNING**

**EMERGENCY PLAN:** None

**CERCLA (COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT)**

| Chemical Name | Wt.% | CERCLA RQ |
|---|---|---|
| Beryllium | 0 - 0.001 | 10 |

**CERCLA RQ:** None

**TSCA (TOXIC SUBSTANCE CONTROL ACT)**

| Chemical Name | CAS |
|---|---|
| Silica, Amorphous | 60676-86-0 |
| Aluminum Oxide | 1344-28-1 |
| Iron Oxide | 1309-37-1 |
| Calcium Oxide | 1305-78-8 |
| Magnesium Oxide | 1309-48-4 |
| Potassium Oxide | 12136-45-7 |
| Titanium Dioxide | 13463-67-7 |
| Silica, Crystalline | 14808-60-7 |
| Manganese | 7439-96-5 |
| Beryllium | 7440-41-7 |

**CLEAN AIR ACT**

**40 CFR PART 68---RISK MANAGEMENT FOR CHEMICAL ACCIDENT RELEASE PREVENTION:** None

**OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA)**

**29 CFR1910.119---PROCESS SAFETY MANAGEMENT OF HIGHLY HAZARDOUS CHEMICALS:** None

**CALIFORNIA PROPOSITION 65:** WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

**RCRA STATUS:** Not regulated.

**OSHA HAZARD COMM. RULE:** Regulated.

**CLEAN WATER ACT:** Not covered by any water quality criteria under Section 304.

**CARCINOGEN:** Boiler slag is not listed by IARC, NIOSH or the NTP as a known or suspected carcinogen. However based

upon the presence of beryllium and cadmium, the product would be classified as a Category 2 Carcinogen pursuant to the GHS Classification System.

**CANADA**

**WHMIS HAZARD SYMBOL AND CLASSIFICATION**

Not Controlled.

**WHMIS (WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM):** Not controlled.

**WHMIS CLASS:** This product has been classified in accordance with the hazard criteria of the CPR and the Safety Data Sheet contains all of the information required by the CPR.

**DOMESTIC SUBSTANCE LIST (INVENTORY):** Listed on Inventory.

**MEXICO** This Safety Data Sheet has been prepared in accordance with the Official Mexican Standard (NOM-018-STPS-2000).

## 16. OTHER INFORMATION

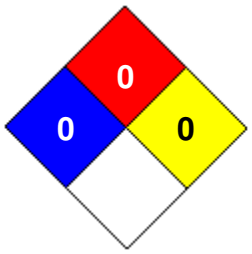
**Date Revised:** 09/09/2015

**REVISION SUMMARY:** This SDS replaces the 09/09/2015 SDS. Revised: **Section 16:** HMIS RATING - HEALTH.

**HMIS RATING**

| | |
|---|---|
| HEALTH | 0 |
| FLAMMABILITY | 0 |
| PHYSICAL HAZARD | 0 |
| PERSONAL PROTECTION | A |

**NFPA CODES**



IBS, Inc.
SPECIALTY PRODUCTS FOR MAINTENANCE & REPAIR

# Material Safety Data Sheet

## Section 1: Chemical Product and Company Information

| | |
|---|---|
| **Product Name** | **Cut-Off Wheels & Grinding Wheels** |
| **Manufactured For:** | IBS, Inc.<br>740 Clay St N.W.<br>Auburn, WA 98001<br>Phone: 253-804-8666<br>Fax: 253-804-8665 |
| **Emergency Phone Number** | 800-231-5725 |
| **Effective Date** | February 4, 2014 |

## Section 2: Composition/Information on Ingredients

*May contain the following ingredients*

| Chemical Name | CAS # | ACGIH TLV | OSHA PEL | NIOSH | Carc. Y/N | Max. % |
|---|---|---|---|---|---|---|
| Aluminum Oxide | 1344-28-1 | 10 mg/m$^3$ | 15 mg/m$^3$ | NA | N | 95 |
| Silicon Carbide | 409-21-2 | 10 mg/m$^3$ | 15 mg/m$^3$ | 10 mg/m$^3$ | N | 95 |
| Zirconium Oxide | NA | 5 mg/m$^3$ | 5 mg/m$^3$ | 5 mg/m$^3$ | N | 50 |
| Cured Resin | NA | NA | NA | NA | N | 20 |
| Calcium Oxide | 1305-78-8 | 2 mg/m$^3$ | 5 mg/m$^3$ | 2 mg/m$^3$ | N | 2.8 |
| Fibrous Glass | NA | 10 mg/m$^3$ | 15 mg/m$^3$ | 5 mg/m$^3$ | N | 16 |
| Iron Pyrites | 12068-85-8 | NA | NA | NA | N | 33.2 |
| Cured Rubber | 78-79-5 | NA | NA | NA | N | 2.6 |
| Kyanite | 1302-76-7 | NA | NA | NA | N | 22.7 |
| Black Beauty | 68476-96-0 | 10 mg/m$^3$ | 15 mg/m$^3$ | NA | N | 9.1 |
| Potassium Fluoborate | 14075-53-7 | 2.5 mg/m$^3$ | 2.5 mg/m$^3$ | NA | N | 2.5 |
| Graphite | 7782-42-5 | 2 mg/m$^3$ | 15 mg/m$^3$ | 2.5 mg/m$^3$ | N | 1.2 |
| Wollastonite | 13983-17-0 | 10 mg/m$^3$ | 15 mg/m$^3$ | 10 mg/m$^3$ | N | 1.5 |
| Feldspar | 68476-25-5 | 10 mg/m$^3$ | 5 mg/m$^3$ | NA | N | 1.1 |
| Fluorspar | 7789-75-5 | 2.5 mg/m$^3$ | 15 mg/cf | NA | N | 2.5 |
| Barium Sulfate | 7727-43-7 | 10 mg/m$^3$ | 15 mg/m$^3$ | 10 mg/m$^3$ | N | 5.1 |
| Calcium Carbonate | 471-34-1 | 10 mg/m$^3$ | 15 mg/m$^3$ | 10 mg/m$^3$ | N | 5.6 |
| Pyrophyllite | 12269-78-2 | NA | 15 mg/m$^3$ | NA | N | 1.1 |
| Sulfur | 7704-34-9 | NA | NA | NA | N | 1.3 |
| Cryolite | 15096-52-3 | 2.5 mg/m$^3$ | 2.5 mg/m$^3$ | 2.5 mg/m$^3$ | N | 7.9 |
| Potassium Sulfate | 7778-80-5 | 10 mg/m$^3$ | 15 mg/m$^3$ | NA | N | 7.2 |

| HMIS Hazard Rating | |
|---|---|
| Health | 0 |
| Flammability | 0 |
| Reactivity | 0 |
| Personal Protection | E |

## Section 3: Hazards Identification

| | |
|---|---|
| **Emergency Overview:** | Dust may be irritating. May cause delayed lung damage. Low hazard to usual industrial or commercial handling. |
| **Target Organs:** | Respiratory System |
| **Inhalation:** | Grinding generates dust. Prolonged exposure to grinding dust may cause respiratory problems or aggravate existing conditions. Inhalation during grinding can cause coughing and shortness of breath. Consideration should also be given to the airborne concentration of the material being ground. |
| **Eye Contact:** | Dust generated during grinding may irritate eyes. |
| **Skin Contact:** | Excessive contact with dust may cause irritation. |
| **Ingestion:** | No known effects but ingestion is not recommended. |
| **Other:** | Some grinding operations may cause noise or vibration irritation. Grinding wheels are not a known carcinogen. |

## Section 4: First Aid Measures

| | |
|---|---|
| **Eyes:** | Immediately flush with plenty of water. Get medical attention if irritation persists. |
| **Skin:** | Wash skin with soap and water. Get medical attention if irritation persists. |
| **Inhalation:** | Move to fresh air. |
| **Other:** | If hearing problems persist, obtain medical assistance if necessary. |

## Section 5: Fire Fighting Measures

| | |
|---|---|
| **Flash Point:** | None |
| **Flammable Limits:** | None |
| **Extinguishing Media:** | Any media appropriate for the surrounding fire. |
| **Fire Fighting Equipment:** | Fire fighters should wear goggles and self-contained breathing apparatus to avoid inhalation of smoke or vapors. |
| **Fire and Explosion Hazards:** | None from this product. Consideration must be given to the potential fire/explosion hazards from the material being processed. Many materials create flammable/explosive dusts when ground. |

## Section 6: Accidental Release Measures

| | |
|---|---|
| **Clean Up:** | Use normal clean up procedures. |
| **Disposal:** | Dispose of in accordance with local, state and federal regulations. |

## Section 7: Handling and Storage

| | |
|---|---|
| **Handling:** | Do not use at speeds greater than product was made to be used. Inspect wheel for damage on arrival and prior to mounting on machine. Avoid breathing dust. Avoid skin and eye contact with grinding dust. Use in well-ventilated area. |
| **Storage:** | Wheels should not be exposed to water or other solvents; any temperature or humidity condition that causes condensation on the wheels or freezing temperatures. See ANSI B7.1, 2.3. |

## Section 8: Exposure Controls/Personal Protections

| | |
|---|---|
| **Respiratory Protection:** | Use NIOSH approved respirators as required to maintain exposure below Threshold Limit Values (TLV/TWA). See OSHA 29 CFR 1910.134. |
| **Skin Protection:** | Leather, cloth, rubber or vinyl gloves as desired by user. |
| **Eye Protection:** | Safety goggles or safety glasses with side shields are recommended. See OSHA 29 CFR 1910.133. |
| **Hearing Protection:** | See OSHA 29 CFR 1910.95 concerning hearing protection. |
| **Engineering Controls:** | Local exhaust ventilation as necessary to keep dust levels below Threshold Limit Values (TLV/TWA). |
| **Other Precautions:** | Visually inspect all wheels before mounting for possible damage. Do not operate above maximum operating speed. Always use a guard. Refer to ANSI B7.1 for the "Safety Requirements for the Use, Care and Protection of Abrasive Wheels." |

## Section 9: Physical and Chemical Properties

| | |
|---|---|
| **Boiling Point:** | NA |
| **Vapor Pressure:** | NA |
| **Vapor Density:** | NA |
| **Specific Gravity:** | Varies |
| **Solubility in Water:** | Very slightly |
| **Freezing Point:** | NA |
| **Melting Point:** | NA |
| **pH:** | Not relevant |
| **Physical Form:** | Solid |
| **Color:** | Various |
| **Odor:** | None |

## Section 10: Stability and Reactivity

| | |
|---|---|
| **Stability (Conditions to Avoid):** | This is a stable material. Avoid overspeed and unsafe use conditions. |
| **Incompatibility (Specific Materials to Avoid):** | Avoid strong acids and bases. |
| **Hazardous Polymerization:** | Will not occur. |
| **Hazardous Decomposition:** | Dusts are generated in use. In most cases, dusts from the work piece will be significantly greater than from the grinding wheel. Coolants may produce other decomposition products. |

## Section 11: Toxicological Information

No Information Available

## Section 12: Ecological Information

No Information Available

## Section 13: Disposal Considerations

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

## Section 14: Transport Information

Grinding wheels are not a DOT hazardous material.

## Section 15: Regulatory Information

This product does not contain and was not manufactured with any Ozone Depleting Chemicals. This product is not subject to SARA 313 reporting.

## Section 16: Other Information

The information and recommendations set forth are taken from sources believed to be accurate. IBS, Inc. makes no warranty with respect to the accuracy of this information or the suitability of these recommendations, assumes no liability to any user thereof. It is the responsibility of the user to investigate and understand pertinent sources of information to comply with all laws and procedures applicable to the safe use and handling of the product and to determine the suitability of the product for its intended use.

# SAVOGRAN COMPANY

# ACETONE



SCL DIV SAVOGRAN
PO Box 130
NORWOOD MA 02062
Telephone: 781-762-5400
Toll Free: 800-225-9872
Fax: 781-762-1095

Date Prepared April 6, 2005
Product Number 4000

Chemtrec 800-424-9300

## MATERIAL SAFETY DATA SHEET

## A. IDENTIFICATION AND EMERGENCY INFORMATION

**Product Name**
Acetone

**Product Code**
4000

**Chemical Name**
2-Propanone

**CAS Number**
67-64-1

**Product Appearance and Odor**
Clear colorless liquid with a characteristic pungent odor

## B. COMPONENTS AND HAZARD INFORMATION

| COMPONENTS | CAS No. COMPONENTS | APPROXIMATE CONCENTRATION |
|---|---|---|
| Acetone | 67-64-1 | By Weight 98-100% |

Hazardous Materials Identification System (HMIS)

| Health | Flammability | Reactivity | Basis |
|---|---|---|---|
| 1 | 3 | 0 | Recommended by Savogran |

Hazard Rating Least – 0 Slight – 1 Moderate – 2 High – 3 Extreme – 4

| Exposure Limit For Total Product | | | Basis |
|---|---|---|---|
| 500 | ppm | TLV | ACGIH, A4 |
| 750 | ppm | STEL | ACGIH |
| 1000 | ppm | TWA | OSHA |

## C. FIRE AND EXPLOSION HAZARD INFORMATION

Immediately flush eyes with large amounts of water for at least 15 minutes. Get prompt medical attention.

**Skin**
Immediately flush with large amounts of water; use soap if available. Remove contaminated clothing, including shoes, after flushing has begun.

**Inhalation**
Using proper respiratory protection, immediately remove the affected victim from exposure. Administer artificial respiration if breathing has stopped. Keep at rest. Call for prompt medical attention.

**Ingestion**
If swallowed, DO NOT induce vomiting. Keep at rest. Get Prompt medical attention.

## D. FIRE AND EXPLOSION HAZARD INFORMATION

**Flash Point (Minimum)**
0.0 $^0$F (-17.8$^0$C)

**Autoignition Temperature**
Approximately 1,000$^0$F (538$^0$C)

**National fire Protection Association (NFPA) – Hazard Identification**

| Health | Flammability | Reactivity | Basis |
|---|---|---|---|
| 1 | 3 | 0 | |

Recommended by the National Fire Protection Association
HAZARD RATING Least – 0 Slight – 1 Moderate – 2
High – 3 Extreme – 4

**Handling Precautions**
This liquid is volatile and gives off invisible vapors. Either the liquid or vapor may settle in low areas or travel some distance along the ground or surface to ignition sources where they may ignite or explode.
Keep product away from ignition sources, such as heat, sparks, pilot lights, static electricity, and open flames.

Flammable or Explosive limits (Approximate percent by volume in air)
**Estimated values: lower flammable limit 2.8% Upper Flammable Limit 13.2%**

**Extinguishing Media and fire Fighting Procedures**
Foam, water spray (fog), dry chemical, carbon dioxide and vaporizing liquid type extinguishing agents may all be suitable for extinguishing fires involving this type of product, depending on size or potential size of fire and circumstances related to the situation. Plan fire protection and response strategy through consultation with local fire protection authorities or appropriate specialists.

The following procedures for this type of product are based on the recommendations in the National Fire Protection Association's "Fire Protection Guide on Hazardous Materials", Eighth Edition (1984):

Use dry chemical, foam or carbon dioxide to extinguish the fire. Water may be ineffective, but water should be used to keep fire exposed containers cool. If a leak or spill has ignited, use water spray to disperse the vapors and to protect men attempting to stop a leak. Water spray may be used to flush spills away from exposures. Minimize breathing of gases, vapor, fumes or decomposition products. Use supplied air-breathing equipment for enclosed or confined spaces or as otherwise needed.

**NOTE:** The inclusion of the phrase "water may be ineffective" is to indicate that although water can be used to cool and protect exposed material, water may not extinguish the fire unless used under favorable conditions by experienced fire fighters trained in fighting all types of flammable liquid fires.

Decomposition Products Under Fire Conditions
Fumes, smoke, carbon monoxide, and other decomposition products, in the case of incomplete combustion.

**"Empty" Container Warning**
"Empty" containers retain residue (liquid and/o vapor) and can be dangerous. DO NOT PRESSURIZE, CUT WELD, BRAZE, SOLDER, DRILL, GRIND OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION; THEY MAY EXPLODE AND CAUSE INJURY OR DEATH. Do not attempt to clean since residue is difficult to remove. "Empty" drums should be completely drained, properly bunged and promptly returned to a drum reconditioner. All other containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations. For work on tanks refer to Occupational Safety and Health Administration regulations, ANSI Z49.1, and other governmental and industrial references pertaining to cleaning, repairing, welding, or other contemplated operations.

## E. HEALTH AND HAZARD INFORMATION

**Variability among Individuals**
Health studies have shown that many petroleum hydrocarbons and synthetic lubricants pose potential human health risks which may vary from person to person. As a precaution, exposure to liquids, vapors, mists or fumes should be minimized.

**Effects of overexposure (Signs and Symptoms of Exposure)**

**Eye Contact:**
Irritating, and will injure eye tissue if not removed promptly.

**Skin Contact:**
Frequent or prolonged contact may irritate and cause dermatitis. Low order of toxicity.

**Inhalation:**
High Vapor concentrations are irritating to the eyes and the respiratory tract, may cause headaches and dizziness, are anesthetic and may have other central nervous system effects.

**Ingestion:**
Minimal Toxicity.
Small amounts of the liquid aspirated into the respiratory system during ingestion, or from vomiting, may cause bronchopneumonia or pulmonary edema.

**Pre-Existing Medical conditions which may be aggravated by exposure**
Pre-existing eye, skin, and respiratory disorders may be aggravated by exposure to this product.

## F. PHYSICAL DATA

The following data are approximate or typical values and should not be used for precise design purposes.

**Boiling Range**
133$^0$F (56.11$^0$C)

**Vapor Pressure**
186 mm hg @ 20$^0$C

**Specific Gravity (15.6 C/15.6 C)**
**0.791**

**Vapor Density (Air=1)**
**2**

**Molecular Weight**
58

**Percent Volatile by Volume**
100%

**PH**
N/A

**Evaporation Rate** @ 1 ATM and 25 C (77 F) (n-Butyl Acetate =1)
6

**Pour, Congealing or melting point**
-139$^0$F (95.35$^0$C)

**Solubility in water** @ 1 ATM and 25 C (77 F)
100%

**Viscosity**: N/A

## G. REACTIVITY

Hazardous polymerization will not occur. This product is incompatible with strong acids or bases and oxidizer.

## H. ENVIRONMENT INFORMATION

Steps To Be Taken In Case Material Is Released Or Spilled
Shut off and eliminate all ignition sources. Keep people away. Recover free product. Add sand, earth or other suitable absorbent to spill area. Minimize breathing vapors. Minimize skin contact. Ventilate confined spaces. Open all windows and doors. Keep product out of sewers and watercourses by diking or impounding. Advise authorities if product has entered or may enter sewers, watercourses, or extensive land areas.

Assure conformity with applicable governmental regulations. Continue to observe precautions for volatile, combustible vapors from absorbed material. Handling equipment must be grounded to prevent sparking.

THE FOLLOWING INFORMATION MAY BE USEFUL IN COMPLYING WITH VARIOUS STATE AND FEDERAL LAWS AND REGULATIONS UNDER VARIOUS ENVIRONMENTAL STATUES:

Reportable Quantity (RQ), EPA Regulation 40 CFR (Cercla Section 102(
The RQ for Acetone is 5,000 pounds. This product contains approximately 100% Acetone

Threshold planning quantity (TPQ), EPA Regulation 40 CFR 355 (Sara Sections 301 –304)
No TPQ for product or any constant greater than 1% or 0.1% (carcinogen).

Toxic chemical release reporting, EPA Regulation 40 CFR 372 (Sara Section 313)
Not Reportable

HAZARDOUS CHEMICAL REPORTING, EPA REGULATION 40 CFR 370 (SARA SECTIONS 311-312)

| Acute Hazard | Chronic Hazard | Fire Hazard | Pressure Hazard | Reactive Hazard | Not Applicable |
|---|---|---|---|---|---|
| XXX | XXX | XXX | | | |

## I. PROTECTION AND PRECAUTIONS

**Ventilation**
Use only with ventilation sufficient to prevent exceeding recommended exposure limit or build up of explosive concentrations of vapor in air. No smoking, flame or other ignition sources. Use explosion-proof ventilation as required to control particulate concentrations.

**Respiratory Protection**
Use supplied-air respiratory protection in confined or enclosed spaces, if needed.

**Protective Gloves**
Use chemical-resistant gloves, if needed, to avoid prolonged or repeated skin contact.

**Eye Protection**
Use splash goggles or face shield when eye contact may occur.

**Other Protective Equipment**
Use chemical-resistant apron or other impervious clothing, if needed, to avoid contaminating regular clothing, which could result in prolonged or repeated skin contact.

**Work Practices/Engineering Controls**
Keep containers closed when not in use. Do not store near heat, sparks, flame or strong oxidants. To prevent fire or explosion risk from static accumulation and discharge, effectively ground product transfer system in accordance with the National Fire Protection Association standard for petroleum products.

**In order to prevent fire or explosion hazards, use appropriate equipment.**

Information on electrical equipment appropriate for use with this product may be found in the latest edition of the National Electrical Code (NFPA-70). This document is available from the National Fire Protection Association, Batterymarch Park, Quincy, Massachusetts 02269

**Personal Hygiene**
Minimize breathing vapor or mist. Avoid prolonged or repeated contact with skin. Remove contaminated clothing; launder or dry-clean before re-use. Remove contaminated shoes and thoroughly clean and dry before re-use. Cleanse skin thoroughly after contact before breaks and meals and at end of work period. Product is readily removed from skin by waterless hand cleaners followed by washing thoroughly with soap and water. Eye wash fountains and safety showers should be available for emergency.

## J. TRANSPORTATION AND OSHA RELATED LABEL INFORMATION

**Transportation Incident Information**
For further information relative to spills resulting from transportation incidents, refer to latest Department of Transportation Emergency Response Guidebook for Hazardous Materials Incidents, DOT 5800.3.
**DOT Identification Number**
Acetone/Flammable Liquid/UN1090

**OSHA Required Label Information**
In compliance with hazard and right-to-know requirements, the following OSHA Hazard Warnings should be found on a label, bill of lading or invoice accompanying this shipment.

**DANGER!**

**FLAMMABLE**

**Note:** Product label will contain additional non-OSHA information.

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The information and recommendations contained herein are, to the best of Savogran's knowledge and belief accurate and reliable as of the date issued. Savogran does not warrant or guarantee their accuracy or reliability, and Savogran shall not be liable for any loss or damage arising out f the use thereof.

The information and recommendations are offered for the user's consideration and examination, and it is the user's responsibility to satisfy itself that they are suitable and complete for its particular use. If buyer repackages this product legal council should be consulted to insur4e proper health, safety and other necessary information is included on the container.

The environmental information included under section H hereof as well as the hazardous materials identification system (HMIS) and National Fire Protection Association (NFPA ratings have been included by Savogran in order to provide additional health and hazard classification information. The ratings recommended are based upon the criteria supplied by the developers of these rating systems, together with Savogran interpretation of the available data.

# AIROSOL COMPANY, INC.

## *MCKAY CHEMICALS* *MECHANICS BRAND*

**1101 Illinois, PO Box 120, Neodesha KS 66757 - Phone 620-325-2666**

## MATERIAL SAFETY DATA SHEET

PRODUCT NAME: GRAPHITE SPRAY
PRODUCT CODE: 50605

Hmis Codes: H F R
2 0 3

### SECTION I - MANUFACTURER IDENTIFICATION

MANUFACTURER'S NAME: Airosol Company, Inc.
ADDRESS: PO Box 120, Neodesha KS 66757
EMERGENCY PHONE: 1-800-535-5053
INFORMATION PHONE: 1-800-633-9576
DATE REVISED: 11/14/05, Revised 3/26/2009

### SECTION I I- HAZARDOUS INGREDIENTS/SARA III INFORMATION

| | OCCUPATIONAL EXPOSURE LIMITS | | | |
|---|---|---|---|---|
| HAZARDOUS COMPONENTS | OSHA | ACGIH | % | CAS NO |
| Acetone | 750 ppm | 750 ppm | 40-45 | 67-64-1 |
| Isopropanol | 400 ppm | 400 ppm | 15-20 | 67-63-0 |
| Isobutane | NE | NA | 10-15 | 75-28-5 |
| Propane | 1000 ppm | NA | 10-15 | 74-98-6 |

*All chemical compounds marked wtih an asterick (*) are toxic chemicals subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1985 and 40 CFR Part 372. You must notify each person to whom this mixture or trade name product is sold. This statement remains a part of this Material Safety Data Sheet.

### SECTION III- PHYSICAL/CHEMICAL CHARACTERISTICS

BOILING POINT: ND
VAPOR DENSITY: Heavier than (Air = 1)
APPEARANCE AND ODOR: Black, alcohol odor
SPECIFIC GRAVITY: (H20=1) 0.75 +/- 0.01
EVAPORATION RATE: Faster than
SOLUBILITY IN WATER: 63 %

### SECTION IV- FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: 52°F METHOD USED: COC

FLAMMABLE LIMITS IN AIR BY VOLUME: LOWER: 1.6% UPPER: 12%

EXTINGUISHING MEDIA: Dry chemical, foam, carbon dioxide. *VOC CONTENT: 98%
SPECIAL FIREFIGHTING PROCEDURES: If potential for exposure to vapors or products of combustion exist, wear complete personal protection equipment including self-contained breathing apparatus with full face shield operated in positive pressure mode. Thermal decomposition of this product is toxic. Water spray can be used to reduce intensity of flames, dilute spills, and keep containers cool.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Vapor is heavier than air and can travel long distances. May decompose during contact with flames, heating elements or in combustion engines releasing irritating toxic and corrosive gases. Container may explode if heated due to resulting pressure.

**PRODUCT NAME: GRAPHITE SPRAY**
**PRODUCT CODE: 50605**

## SECTION V- REACTIVITY DATA

STABILITY: Stable

INCOMPATIBILITY (MATERIALS TO AVOID): Strong oxidizers, aluminum, acetaldehyde, chlorine, ethylene oxide, hydrogen palladium combination, hydrogen peroxide, sulfuric acid combination, hypochlorous acid, isocyanates, nitroform, phosgene, oleum, perchloric acid, potassium t-butoxide, acids, alkalis, amines, halogens, anhydride, and aldehydes. May liberate carbon monoxide or carbon dioxide.
HAZARDOUS POLYMERIZATION: Will not occur.

## SECTION VI- HEALTH HAZARD DATA

**EFFECTS OF OVER-EXPOSURE:**

EYES: May cause severe irritation, burning sensation and blurred vision.

SKIN: Brief contact may dry the skin or cause burning or stinging sensation. Prolonged contact may irritate the skin causing dermatitis.

INGESTION: Swallowing large quantities causes nausea, vomiting, stomach cramps and diarrhea and perhaps unconsciousness or death.

INHALATION: Vapor causes irritation of nasal passages and throat. May cause headaches, vomiting, and coma. Can cause pulmonary edema (accumulation of fluid in the lungs). Signs may be delayed for several hours. High concentrations can cause dizziness, incoordination and anesthesia which are usually reversible.

CHRONIC EFFECTS OF EXPOSURE: Chronic effects of exposure include prolonged or repeated exposure to high concentrations can produce severe or fatan CNS depression.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: Persons with pre-existing skin disorders, eye problems or impaired respiratory function may be susceptible to the effects of this substance.

**EMERGENCY AND FIRST AID PROCEDURES:**
**SKIN AND EYE CONTACT:**
EYES: Immediately flush eyes with large amounts of water for at least 15 minutes. Hold eyelids apart to ensure complete flushing. If irritation persists, **get medical help immediately**.
SKIN: Immediately remove contaminated clothing. Wash skin thoroughly with soap and water for at least 15 minutes. Be sure to launder clothing before wearing. If irritation persists, **seek physician's advice at once**.
INHALATION: Move patient to area of fresh air. If breathing has stopped, give artificial respiration then oxygen if needed. Contact physician immediately.
INGESTION: Unlikely as an aerosol. If conscious, INDUCE VOMITING IMMEDIATELY by giving two glasses of water and sticking a finger down the throat. Get immediate medical attention. Never give anything by mouth to an unconscious or convulsing person.

## SECTION VII- PRECAUTIONS FOR SAFE HANDLING AND USE

STEPS TO BE TAKEN IN CASE AMOUNT OF MATERIAL IS RELEASED OR SPILLED: Eliminate all sources of ingition. Wear protected equipment including rubber boots, rubber gloves, rubber apron and self-contained breathing apparatus and eyewear with splash guards. Ventilate area where heavy vapor may collect. Comply with federal, state, and local regulations on reporting releases.

WASTE DISPOSAL METHOD: All notification, cleanup and disposal should be carried out in accordance with federal, state, and local regulations. For large spills, contain by diking with soil or approved waste containers or absorb with non-combustible sorbent material. Place residue in DOT-approved waste containers. Keep out of sewers, storm drain, surface waters, and soil.

## SECTION VIII- HANDLING & STORAGE PRECAUTIONS

Store in tightly sealed containers. Keep away from heat, sparks and open flame. Do not get in eyes on skin or clothing. Do not breathe vapor, mist or gas. Do not store or transfer to an unmarked container. Do not throw empty containers in trash compactor. Do not store in direct sun. Store containers below 120°F. Read label before using. Empty containers may contain hazardous residue.

## SECTION VIII- PRECAUTIONS FOR SAFE HANDLING AND USE (continued)

Do not drop, reuse or refill container. Do not smoke around this product. Do not cut, grind or weld on or near container due to possible fume generation or flame occurance.

## SECTION IX- SPECIAL PROTECTION

RESPIRATORY PROTECTION: Supplied air; scuba in case of release or fire, adequately ventilated areas or NISH/MSH approved respirator.

VENTILATION: Use with adequate ventilation. Check air for contamination and for oxygen deficiency. Where ventilation is inadequate, use a local exhaust system to remove vapors.

PROTECTIVE GLOVES: Lined non-permeable rubber gloves.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: Splash goggles with shields.

WORK/HYGIENIC PRACTICES: Non-permeable clothing to protect skin from liquid contact.

## SECTION X- REGULATORY INFORMATION

SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 (SARA) TITLE III:

| CHEMICAL | CAS NUMBER | CONCENTRATION % |
|---|---|---|
| None listed | | |

FEDERAL EPA: Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) requires the notification of the National Response Center of Release of qualtities of hazardous substances equal to or greater than the reportable quantities (Rqs) in 40 CFR 302.4.

| CHEMICAL | CAS NUMBER | CONCENTRATION % | UPPER BOUND | RQS IN #S |
|---|---|---|---|---|
| CALIFORNIA PROPOSITION 65 | None | | | |
| MASSACHUSETTS RIGHT TO KNOW | Yes | | | |
| Propane | 74-98-6 | | 10-15 % | |
| Isobutane | 75-28-5 | | 10-15 % | |
| Acetone | 67-64-1 | | 40-45 % | |
| Isopropyl alcohol | 67-63-0 | | 15-20 % | |
| PENNSYLVANIA RIGHT TO KNOW | Yes | | | |
| Propane | 74-98-6 | | 10-15 % | |
| Isobutane | 75-28-5 | | 10-15 % | |
| Acetone | 67-64-1 | | 40-45 % | |
| Isopropyl alcohol | 67-63-0 | | 15-20 % | |
| NEW JERSEY RIGHT TO KNOW | Yes | | | |
| Propane | 74-98-6 | | 10-15 % | |
| Isobutane | 75-28-5 | | 10-15 % | |
| Acetone | 67-64-1 | | 40-45 % | |
| Isopropyl alcohol | 67-63-0 | | 15-20 % | |

## SECTION X- REGULATORY INFORMATION (continued)

TOXIC SUBSTANCE CONTROL ACT (TSCA) STATUS: Listed
CALIFORNIA VOCs: NA
NFPA Rating as an Aerosol: Level 3
HMIS: Health 2 Reactivity 0 Flammability 3

CARCINOGENICITY: Chemical IARC NTP OSHA
NONE LISTED

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# Air, compressed

Safety Data Sheet P-4560

according to U.S. Code of Federal Regulations 29 CFR 1910.1200, Hazard Communication.

Date of issue: 01/01/1979 Revision date: 07/02/2015 Supersedes: 06/24/2015

## SECTION: 1. Product and company identification

### 1.1. Product identifier

| | | |
|---|---|---|
| Product form | : | Substance |
| Name | : | Air, compressed |
| Formula | : | Air: mixture of 19.5 to 23.5 percent oxygen, balance nitrogen; or air compressed from the atmosphere |
| Other means of identification | : | Air, Medipure Air, Plasma Air, Zero Air, Air - Diving Grade |

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

| | | |
|---|---|---|
| Use of the substance/mixture | : | Industrial use<br>Medical applications.<br>Diving Gas (Underwater Breathing) |

### 1.3. Details of the supplier of the safety data sheet

Praxair, Inc.
39 Old Ridgebury Road
Danbury, CT 06810-5113 - USA
T 1-800-772-9247 (1-800-PRAXAIR) - F 1-716-879-2146
www.praxair.com

### 1.4. Emergency telephone number

| | | |
|---|---|---|
| Emergency number | : | Onsite Emergency: 1-800-645-4633<br><br>CHEMTREC, 24hr/day 7days/week<br>— Within USA: 1-800-424-9300, Outside USA: 001-703-527-3887<br>(collect calls accepted, Contract 17729) |

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

**Classification (GHS-US)**

Compressed gas H280

### 2.2. Label elements

**GHS-US labeling**

Hazard pictograms (GHS-US) :



GHS04

Signal word (GHS-US) : WARNING

Hazard statements (GHS-US) : H280 - CONTAINS GAS UNDER PRESSURE; MAY EXPLODE IF HEATED
CGA-HG24 - MAY SUPPORT COMBUSTION.

Precautionary statements (GHS-US) : P202 - Do not handle until all safety precautions have been read and understood
CGA-PG05 - Use a back flow preventive device in the piping.
CGA-PG20+CGA-PG10 - Use only with equipment of compatible materials of construction and rated for cylinder pressure.
CGA-PG06 - Close valve after each use and when empty.
CGA-PG02 - Protect from sunlight when ambient temperature exceeds 52°C (125°F).

### 2.3. Other hazards

No additional information available

### 2.4. Unknown acute toxicity (GHS-US)

No data available



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## SECTION 3: Composition/information on ingredients

### 3.1. Substance

Name : Air, compressed

| Name | Product identifier | % |
|---|---|---|
| Air | (CAS No) 132259-10-0 | 100 |

### 3.2. Mixture

Not applicable

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

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

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

First-aid measures after eye contact : Adverse effects not expected from this product. In case of eye irritation: Rinse immediately with plenty of water. Consult an ophthalmologist if irritation persists.

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

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

No additional information available

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

None.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

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

### 5.2. Special hazards arising from the substance or mixture

No additional information available

### 5.3. Advice for firefighters

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

Special protective equipment for fire fighters : Standard protective clothing and equipment (Self Contained Breathing Apparatus) for fire fighters.

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

Stop flow of product if safe to do so.

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

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

General measures : Evacuate area. Ensure adequate air ventilation. Wear self-contained breathing apparatus when entering area unless atmosphere is proven to be safe. Stop leak if safe to do so.

#### 6.1.1. For non-emergency personnel

No additional information available

#### 6.1.2. For emergency responders

No additional information available



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### 6.2. Environmental precautions

No additional information available

### 6.3. Methods and material for containment and cleaning up

No additional information available

### 6.4. Reference to other sections

See also sections 8 and 13.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

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

Safe use of the product : **The suitability of this product as a component in underwater breathing gas mixtures** is to be determined by or under the supervision of personnel experienced in the use of underwater breathing gas mixtures and familiar with the physiological effects, methods employed, frequency and duration of use, hazards, side effects, and precautions to be taken.

### 7.2. Conditions for safe storage, including any incompatibilities

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

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

### 7.3. Specific end use(s)

None.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

No additional information available

### 8.2. Exposure controls

Eye protection : Wear safety glasses with side shields.

Skin and body protection : Wear work gloves and metatarsal shoes for cylinder handling. Protective equipment where needed. Select in accordance with OSHA 29 CFR 1910.132, 1910.136, and 1910.138.

Respiratory protection : When workplace conditions warrant respirator use, follow a respiratory protection program that meets OSHA 29 CFR 1910.134, ANSI Z88.2, or MSHA 30 CFR 72.710 (where applicable). Use an air-supplied or air-purifying cartridge if the action level is exceeded. Ensure that the respirator has the appropriate protection factor for the exposure level. If cartridge type respirators are used, the cartridge must be appropriate for the chemical exposure (e.g., an organic vapor cartridge). For emergencies or instances with unknown exposure levels, use a self-contained breathing apparatus (SCBA).



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## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

| | | |
|---|---|---|
| Physical state | : | Gas |
| Appearance | : | Colorless gas. |
| Molecular mass | : | 28.975 g/mol |
| Color | : | Colorless |
| Odor | : | Odorless. |
| Odor threshold | : | No data available |
| pH | : | Not applicable. |
| Relative evaporation rate (butyl acetate=1) | : | No data available |
| Relative evaporation rate (ether=1) | : | Not applicable. |
| Melting point | : | No data available |
| Freezing point | : | -216.2 °C |
| Boiling point | : | -194.3 °C |
| Flash point | : | No data available |
| Auto-ignition temperature | : | No data available |
| Decomposition temperature | : | No data available |
| Flammability (solid, gas) | : | No data available |
| Vapor pressure | : | Not applicable. |
| Relative vapor density at 20 °C | : | No data available |
| Relative density | : | No data available |
| Density | : | 1.2 kg/m³ |
| Relative gas density | : | 1 |
| Solubility | : | Water: 0.0292 % |
| Log Pow | : | Not applicable. |
| Log Kow | : | Not applicable. |
| Viscosity, kinematic | : | Not applicable. |
| Viscosity, dynamic | : | Not applicable. |
| Explosive properties | : | Not applicable. |
| Oxidizing properties | : | None. |
| Explosion limits | : | No data available |

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

No additional information available

### 10.2. Chemical stability

Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

No additional information available

### 10.4. Conditions to avoid

No additional information available

### 10.5. Incompatible materials

No additional information available

### 10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.



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## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity : Not classified

Skin corrosion/irritation : Not classified

pH: Not applicable.

Serious eye damage/irritation : Not classified

pH: Not applicable.

Respiratory or skin sensitization : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not classified

## SECTION 12: Ecological information

### 12.1. Toxicity

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

### 12.2. Persistence and degradability

| **Air, compressed** | |
|---|---|
| Persistence and degradability | No ecological damage caused by this product. |

| **Air (132259-10-0)** | |
|---|---|
| Persistence and degradability | No ecological damage caused by this product. |

### 12.3. Bioaccumulative potential

| **Air, compressed** | |
|---|---|
| Log Pow | Not applicable. |
| Log Kow | Not applicable. |
| Bioaccumulative potential | No ecological damage caused by this product. |

| **Air (132259-10-0)** | |
|---|---|
| Log Pow | Not applicable for inorganic gases. |
| Bioaccumulative potential | No ecological damage caused by this product. |

### 12.4. Mobility in soil

| **Air, compressed** | |
|---|---|
| Mobility in soil | No data available. |

| **Air (132259-10-0)** | |
|---|---|
| Ecology - soil | No ecological damage caused by this product. |

### 12.5. Other adverse effects

Effect on ozone layer : None.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

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



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## SECTION 14: Transport information

In accordance with DOT

| | | |
|---|---|---|
| Transport document description | : | UN1002 Air, compressed, 2.2 |
| UN-No.(DOT) | : | UN1002 |
| Proper Shipping Name (DOT) | : | Air, compressed |
| Transport hazard class(es) (DOT) | : | 2.2 - Class 2.2 - Non-flammable compressed gas 49 CFR 173.115 |
| Hazard labels (DOT) | : | 2.2 - Non-flammable gas |




| | | |
|---|---|---|
| DOT Special Provisions (49 CFR 172.102) | : | 78 - This entry may not be used to describe compressed air which contains more than 23.5 percent oxygen. An oxidizer label is not required for any oxygen concentration of 23.5 percent or less. |

### Additional information

| | | |
|---|---|---|
| Other information | : | No supplementary information available. |
| Special transport precautions | : | Avoid transport on vehicles where the load space is not separated from the driver's compartment. Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency. Before transporting product containers: - Ensure there is adequate ventilation. - Ensure that containers are firmly secured. - Ensure cylinder valve is closed and not leaking. - Ensure valve outlet cap nut or plug (where provided) is correctly fitted. - Ensure valve protection device (where provided) is correctly fitted. |

### Transport by sea

| | | |
|---|---|---|
| UN-No. (IMDG) | : | 1002 |
| Proper Shipping Name (IMDG) | : | AIR, COMPRESSED |
| Class (IMDG) | : | 2 - Gases |

### Air transport

| | | |
|---|---|---|
| UN-No. (IATA) | : | 1002 |
| Proper Shipping Name (IATA) | : | Air, compressed |
| Class (IATA) | : | 2 |

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

| **Air, compressed** | | |
|---|---|---|
| SARA Section 311/312 Hazard Classes | Sudden release of pressure hazard | |
| | All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory except for: | |
| Air | CAS No 132259-10-0 | 100 |

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

### 15.2. International regulations

#### CANADA

| **Air (132259-10-0)** |
|---|

#### EU-Regulations



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### 15.2.2. National regulations

No additional information available

### 15.3. US State regulations

| Air, compressed() | |
|---|---|
| U.S. - California - Proposition 65 - Carcinogens List | No |
| U.S. - California - Proposition 65 - Developmental Toxicity | No |
| U.S. - California - Proposition 65 - Reproductive Toxicity - Female | No |
| U.S. - California - Proposition 65 - Reproductive Toxicity - Male | No |

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

| Air (132259-10-0) | | | | |
|---|---|---|---|---|
| U.S. - California - Proposition 65 - Carcinogens List | U.S. - California - Proposition 65 - Developmental Toxicity | U.S. - California - Proposition 65 - Reproductive Toxicity - Female | U.S. - California - Proposition 65 - Reproductive Toxicity - Male | No significant risk level (NSRL) |
| No | No | No | No | |

## SECTION 16: Other information

Revision date : 7/2/2015 12:00:00 AM

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

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

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

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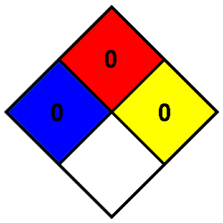
| | |
|---|---|
| NFPA health hazard | : 0 - Exposure under fire conditions would offer no hazard beyond that of ordinary combustible materials. |
| NFPA fire hazard | : 0 - Materials that will not burn. |
| NFPA reactivity | : 0 - Normally stable, even under fire exposure conditions, and are not reactive with water. |




**HMIS III Rating**

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

SDS US (GHS HazCom 2012) - Praxair

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



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# MATERIAL SAFETY DATA SHEET

**Review Date:** 08/29/2005

## SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT: SHELLZONE® ALL-SEASON Antifreeze/Coolant Prediluted 50/50**

**MSDS NUMBER:** 400930E - 3
**PRODUCT CODE(S):** 5060208, 94067, 9406700001, 9406700055, 9406706021

**MANUFACTURER**
SOPUS Products
P.O. Box 4427
Houston, TX. 77210-4427

**TELEPHONE NUMBERS**
**Spill Information:** (877) 242-7400
**Health Information:** (877) 504-9351
**MSDS Assistance Number:** (877) 276-7285

## SECTION 2 PRODUCT/INGREDIENTS

| INGREDIENTS | CAS# | CONCENTRATION |
|---|---|---|
| Antifreeze/Coolant | | |
| Ethylene Glycol | 107-21-1 | 45 - 55 %weight |
| Deionized water | 7732-18-5 | 45 - 55 %weight |

## SECTION 3 HAZARDS IDENTIFICATION

**EMERGENCY OVERVIEW**
**Appearance & Odor:** Fluorescent green liquid. Mild odor.
**Health Hazards:** May be harmful or fatal if swallowed. May cause acidosis, cardiopulmonary and kidney effects. May cause CNS depression.
**NFPA Rating (Health, Fire, Reactivity):** 2, 1, 0
Hazard Rating: Least - 0 Slight - 1 Moderate - 2 High - 3 Extreme - 4

**Inhalation:**
In applications where vapors (caused by high temperature) or mists (caused by mixing or spraying) are created, breathing may cause a mild burning sensation in the nose, throat and lungs.

**Eye Irritation:**
If irritation occurs, a temporary burning sensation, minor redness, swelling, and/or blurred vision may result.

**Skin Contact:**
May cause slight irritation of the skin. If irritation occurs, a temporary burning sensation and minor redness and/or swelling may result. Other adverse effects not expected from brief skin contact.

**Ingestion:**
May be harmful or fatal if swallowed. Contains ethylene glycol and/or diethylene glycol which are toxic when swallowed. A

lethal dose for an adult is 1 ml per kilogram or about 4 ounces (1/2 cup). Severe kidney damage can occur as a result of ingestion. Ingestion may result in nausea, vomiting and abdominal cramps. Metabolic acidosis and cardiopulmonary effects can occur following ingestion. May cause Central Nervous System (CNS) depression.

**Other Health Effects:**
Refer to Section 11, Toxicological Information, for specific information on the following effects:
Developmental Toxicity

**Primary Target Organs:**
The following organs and/or organ systems may be damaged by overexposure to this material and/or its components:
Cardiovascular System, Kidney, Liver, Lungs

**Signs and Symptoms:**
May cause cardiopulmonary effects including rapid respiration and heartbeat, cyanosis and in severe cases, pulmonary edema and pneumonia. Early to moderate CNS depression may be evidenced by giddiness, headache, dizziness and nausea. In extreme cases, unconsciousness and death may occur. Kidney damage may be indicated by changes in urine output or appearance, pain upon urination or in the lower back or general edema (swelling from fluid retention). Liver damage may be indicated by loss of appetite, jaundice (yellowish skin and eye color), fatigue and sometimes pain and swelling in the upper right abdomen.

**Aggravated Medical Conditions:**
Pre-existing eye, skin, respiratory, liver and kidney disorders and may be aggravated by exposure to this product.

**For additional health information, refer to section 11.**

## SECTION 4 FIRST AID MEASURES

**Inhalation:**
Move victim to fresh air and provide oxygen if breathing is difficult. Get medical attention.

**Skin:**
Flush exposed area with water and follow by washing with soap if available. If redness, swelling, pain and/or blisters occur, transport to the nearest medical facility for additional treatment. If skin irritation persists after washing, get medical advice.

**Eye:**
Flush eyes with plenty of water while holding eyelids open. Rest eyes for 30 minutes. If redness, burning, blurred vision or swelling occur, transport to nearest medical facility for additional treatment. If eye irritation persists, seek medical advice.

**Ingestion:**
DO NOT take internally. If swallowed, IMMEDIATELY contact a poison control center, emergency treatment center, or physician. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs.

**Note to Physician:**
IMMEDIATE TREATMENT IS EXTREMELY IMPORTANT! Ethylene Glycol (EG) and Diethylene Glycol (DEG) intoxication may initially produce behavioral changes, drowsiness, vomiting, diarrhea, thirst, and convulsions. EG and DEG are nephrotoxic. End stages of poisoning may include renal damage or failure with acidosis. Supportive measures, supplemented with hemodialysis if indicated, may limit the progression and severity of toxic effects. May cause cardiopulmonary effects. For ETHYLENE GLYCOL POISONING, intravenous ethanol is a recognized antidotal treatment; other antidotal treatments also exist for ethylene glycol poisoning.

## SECTION 5 FIRE FIGHTING MEASURES

**Flash Point [Method]:** >239 °F/>115 °C [ Cleveland Open Cup]

**Extinguishing Media:**
Prevent run off from fire control or dilution from entering streams, sewers or drinking water supply. Use water fog, 'alcohol foam', dry chemical or carbon dioxide (CO2) to extinguish flames. Do not use a direct stream of water.

**Fire Fighting Instructions:**
Do not enter confined fire space without full bunker gear (helmet with face shield, bunker coats, gloves and rubber boots), including a positive pressure, NIOSH approved, self-contained breathing apparatus. This material is non-flammable.

## SECTION 6 ACCIDENTAL RELEASE MEASURES

**Protective Measures:**
May burn although not readily ignitable.

Wear appropriate personal protective equipment when cleaning up spills. Refer to Section 8.

**Spill Management:**
Shut off source of leak if safe to do so. Dike and contain spill.

FOR LARGE SPILLS: Remove with vacuum truck or pump to storage/salvage vessels.

FOR SMALL SPILLS: Soak up residue with an absorbent such as clay, sand or other suitable material. Place in non-leaking container and seal tightly for proper disposal.

**Reporting:**
U.S. regulations require reporting releases of this material to the environment which exceed the reportable quantity to the National Response Center at (800)424-8802.

## SECTION 7 HANDLING AND STORAGE

**Precautionary Measures:**
Do not ingest. Avoid prolonged or repeated contact with eyes, skin or clothing. Avoid breathing of vapors, fumes or mists. Use with adequate ventilation. Wash thoroughly after handling. Avoid heat, open flames, including pilot lights, and strong oxidizing agents. Use explosion-proof ventilation to prevent vapor accumulation. Ground all handling equipment to prevent sparking. Avoid contact with eyes, skin and clothing. Wash thoroughly after handling.

**Storage:**
Do not store in open or unlabeled containers. Store in a cool, dry place with adequate ventilation. Keep away from open flames and high temperatures.

**Container Warnings:**
Keep containers closed when not in use. Containers, even those that have been emptied, can contain explosive vapors. Do not cut, drill, grind, weld or perform similar operations on or near containers.

## SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

| Chemical | Limit | TWA | STEL | Ceiling | Notation |
|---|---|---|---|---|---|
| Ethylene Glycol | ACGIH TLV | | | 100 mg/m3 | |
| Ethylene Glycol | OSHA PEL - 1989(revoked) | | | 50 ppmv | |

## Exposure Controls

Provide adequate ventilation to control airborne concentrations below the exposure guidelines/limits. Eye washes and showers for emergency use.

## Personal Protection

Personal protective equipment (PPE) selections vary based on potential exposure conditions such as handling practices, concentration and ventilation. Information on the selection of eye, skin and respiratory protection for use with this material is provided below.

**Eye Protection:**
Chemical Goggles - If liquid contact is likely., or Safety glasses with side shields

**Skin Protection:**
Use protective clothing which is chemically resistant to this material. Selection of protective clothing depends on potential exposure conditions and may include gloves, boots, suits and other items. The selection(s) should take into account such factors as job task, type of exposure and durability requirements.

Published literature, test data and/or glove and clothing manufacturers indicate the best protection is provided by:
Neoprene, or Nitrile Rubber

**Respiratory Protection:**
If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, an approved respirator must be worn. Respirator selection, use and maintenance should be in accordance with the requirements of the OSHA Respiratory Protection Standard, 29 CFR 1910.134.

Types of respirator(s) to be considered in the selection process include:
For Mist: Air Purifying, R or P style NIOSH approved respirator.
For Vapors: Air Purifying, R or P style prefilter & organic cartridge, NIOSH approved respirator. Self-contained breathing apparatus for use in environments with unknown concentrations or emergency situations.

## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

**Appearance & Odor:** Fluorescent green liquid. Mild odor.
**Substance Chemical Family:** Ethylene Glycols

| | | | |
|---|---|---|---|
| **Boiling Point** | 388 °F | **Flash Point** | > 239 °F [Cleveland Open Cup] |
| **Freezing Point** | -34 °F | **Odor** | Mild odor. |
| **Specific Gravity** | 1.06 - 1.09 | | |

**NOTE:** The freezing and boiling point values reflect a 50% solution in water at atmospheric pressure.

## SECTION 10 REACTIVITY AND STABILITY

**Hazardous Decomposition Products:**

Thermal decomposition products are highly dependent on combustion conditions. A complex mixture of airborne solids, liquids and gases will evolve when this material undergoes pyrolysis or combustion. Acids, Aldehydes, Carbon Monoxide, Carbon Dioxide, Ketonesand other unidentified organic compounds may be formed upon combustion.

## SECTION 11 TOXICOLOGICAL INFORMATION

**Acute Toxicity**

| TEST | Result | OSHA Classification | Material Tested |
|---|---|---|---|
| Dermal LD50 | 9.5 g/kg(Rabbit) | Non-Toxic | Based on components(s) |

**Carcinogenicity Classification**

| Chemical Name | NTP | IARC | ACGIH | OSHA |
|---|---|---|---|---|
| Antifreeze/Coolant | No | Not Reviewed | No | No |

| | |
|---|---|
| **Cardiovascular System** | Ingestion of large doses can cause metabolic acidosis that results in cardiopulmonary effects. |
| **Developmental Toxicity** | Oral exposure of pregnant rats and mice to ethylene glycol has produced birth defects in the offspring. |
| **Kidney** | Ingestion of ethylene glycol can cause bladder stones and kidney damage which can be fatal. |
| **Liver** | Prolonged and repeated ingestion of ethylene glycol has produced liver damage in rats. |
| **Lungs** | Ingestion of large doses can cause metabolic acidosis that results in cardiopulmonary effects. |
| **Whole Animal** | Orally, humans are more sensitive to ethylene glycol than rodents. The reported lethal dose range for an adult human is 1 -2 ml/kg, or 1/4 to 1/2 cup. |

## SECTION 12 ECOLOGICAL INFORMATION

**Environmental Impact Summary:**
There is no ecological data available for this product.

**Environmental Fate:**
The toxicity of this material to aquatic organisms has not been fully evaluated. This material must not be discharged or allowed to come into contact with sewage and drainage systems and any surface water body.

## SECTION 13 DISPOSAL CONSIDERATIONS

**RCRA Information:**

Under RCRA, it is the responsibility of the user of the material to determine, at the time of the disposal, whether the material meets RCRA criteria for hazardous waste. This is because material uses, transformations, mixtures, processes, etc. may affect the classification. Refer to the latest EPA, state and local regulations regarding proper disposal. Follow all applicable laws and regulations. Used antifreeze recycling is recommended. Do not drain on the ground or into storm drainage systems. Do not dispose in sanitary sewer systems except where permitted by law.

## SECTION 14 TRANSPORT INFORMATION

**US Department of Transportation Classification**
This material is not regulated under 49 CFR if in a container of 119 gallon capacity or less. If shipped in a container of over 119 gallon capacity then the DOT information must be accompanied with RQ notation, or, an otherwise 'Not Regulated' product will be classified as Environmentally Hazardous (solid/liquid) N.O.S., Class 9, Packing group III unless the product qualifies for the petroleum exemption (49 CFR 171.8).

**Hazardous Substance/Material RQ:** Ethylene glycol / 10539.7068 lbs

**International Air Transport Association**

| | |
|---|---|
| **Hazard Class/Division:** | 9 (Miscellaneous) |
| **Identification Number:** | UN3082 |
| **Packing Group:** | III |
| **Proper Shipping Name:** | Environmentally Hazardous Substances, Liquid, N.O.S. |
| **Technical Name(s):** | Ethylene Glycol |

**International Maritime Organization Classification**

| | |
|---|---|
| **Hazard Class/Division:** | 9 (Miscellaneous) |
| **Identification Number:** | UN3082 |
| **Packing Group:** | III |
| **Proper Shipping Name:** | Environmentally Hazardous Substances, Liquid, N.O.S. |
| **Technical Name(s):** | Ethylene Glycol |

## SECTION 15 REGULATORY INFORMATION

### Federal Regulatory Status

**OSHA Classification:**
Product is hazardous according to the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

**Comprehensive Environmental Release, Compensation & Liability Act (CERCLA):**

| | | |
|---|---|---|
| Ethylene Glycol | RQ 5000 lbs | Reportable Spill => 10539.706764 lbs or 1264.21 gal |
| Potassium hydroxide | RQ 1000 lbs | Reportable Spill => 266666.666667 lbs or 31985.93 gal |

**Ozone Depleting Substances (40 CFR 82 Clean Air Act):**
This material does not contain nor was it directly manufactured with any Class I or Class II ozone depleting substances.

**Superfund Amendment & Reauthorization Act (SARA) Title III:**
There are no components in this product on the SARA 302 list.

**SARA Hazard Categories (311/312):**

| Immediate Health | Delayed Health | Fire | Pressure | Reactivity |
|---|---|---|---|---|
| YES | YES | NO | NO | NO |

**SARA Toxic Release Inventory (TRI) (313):**
Ethylene Glycol

**Toxic Substances Control Act (TSCA) Status:**
All component(s) of this material is(are) listed on the EPA/TSCA Inventory of Chemical Substances.

**Other Chemical Inventories:**
Component(s) of this material is (are) listed on the Australian AICS, Canadian DSL, Chinese Inventory, European EINECS, Korean Inventory, Philippines PICCS,

## State Regulation

The following chemicals are specifically listed by individual states; other product specific health and safety data in other sections of the MSDS may also be applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state.

**New Jersey Right-To-Know Chemical List:**

| | | |
|---|---|---|
| Ethylene Glycol (0878) | 45 - 55 %weight | Special Hazard |

**Pennsylvania Right-To-Know Chemical List:**

| | | |
|---|---|---|
| 1,2-Ethanediol (107-21-1) | 45 - 55 %weight | Environmental Hazard |

## SECTION 16 OTHER INFORMATION

**Revision#:** 3
**Review Date:** 08/29/2005
**Revision Date:** 04/14/2005
**Revisions since last change (discussion):** This Material Safety Data Sheet (MSDS) has been reviewed to fully comply with the guidance contained in the ANSI MSDS standard (ANSI Z400.1-2003). We encourage you to take the opportunity to read the MSDS and review the information contained therein.

## SECTION 17 LABEL INFORMATION

READ AND UNDERSTAND MATERIAL SAFETY DATA SHEET BEFORE HANDLING OR DISPOSING OF PRODUCT. THIS LABEL COMPLIES WITH THE REQUIREMENTS OF THE OSHA HAZARD COMMUNICATION STANDARD (29 CFR 1910.1200) FOR USE IN THE WORKPLACE. THIS LABEL IS NOT INTENDED TO BE USED WITH PACKAGING INTENDED FOR SALE TO CONSUMERS AND MAY NOT CONFORM WITH THE REQUIREMENTS OF THE

CONSUMER PRODUCT SAFETY ACT OR OTHER RELATED REGULATORY REQUIREMENTS.

**PRODUCT CODE(S):** 5060208, 94067, 9406700001, 9406700055, 9406706021

**SHELLZONE® ALL-SEASON Antifreeze/Coolant Prediluted 50/50**

**WARNING!**

**MAYBE HARMFUL OR FATAL IF SWALLOWED. MAY CAUSE ACIDOSIS, CARDIOPULMONARY AND KIDNEY EFFECTS. MAY CAUSE CENTRAL NERVOUS SYSTEM DEPRESSION. The following organs and/or organ systems may be damaged by overexposure to this material and/or its components.**

**MAY CAUSE DAMAGE TO: Cardiovascular System, Kidney, Liver, Lungs**

**Refer to Section 11, Toxicological Information, for specific information on the following effects: Developmental Toxicity**

**Precautionary Measures:**
Avoid prolonged or repeated contact with eyes, skin and clothing. Avoid breathing of vapors, fumes, or mist. Use only with adequate ventilation. Avoid contact with eyes, skin and clothing. Keep container closed when not in use. Wash thoroughly after handling.

## FIRST AID

**Inhalation:** Move victim to fresh air and provide oxygen if breathing is difficult. Get medical attention.
**Skin Contact:** Flush exposed area with water and follow by washing with soap if available. If redness, swelling, pain and/or blisters occur, transport to the nearest medical facility for additional treatment. If skin irritation persists after washing, get medical advice.
**Eye Contact:** Flush eyes with plenty of water while holding eyelids open. Rest eyes for 30 minutes. If redness, burning, blurred vision or swelling occur, transport to nearest medical facility for additional treatment. If eye irritation persists, seek medical advice.
**Ingestion:** DO NOT take internally. If swallowed, IMMEDIATELY contact a poison control center, emergency treatment center, or physician. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs.

## FIRE

**In case of fire,** Use water fog, 'alcohol foam', dry chemical or carbon dioxide (CO2) to extinguish flames. Do not use a direct stream of water.

## SPILL OR LEAK

Dike and contain spill.
FOR LARGE SPILLS: Remove with vacuum truck or pump to storage/salvage vessels.

FOR SMALL SPILLS: Soak up residue with an absorbent such as clay, sand or other suitable material. Place in non-leaking container and seal tightly for proper disposal.

CONTAINS: Ethylene Glycol, 107-21-1; Deionized water, 7732-18-5

**NFPA Rating (Health, Fire, Reactivity):** 2, 1, 0

## TRANSPORTATION

**US Department of Transportation Classification**
**This material is not regulated under 49 CFR if in a container of 119 gallon capacity or less. If shipped in a container of over 119 gallon capacity then the DOT information must be accompanied with RQ notation, or, an otherwise 'Not Regulated' product will be classified as Environmentally Hazardous (solid/liquid) N.O.S., Class 9, Packing group III unless the product qualifies for the petroleum exemption (49 CFR 171.8).**

**Hazardous Substance/Material RQ:** Ethylene glycol / 10539.7068 lbs

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

**Name and Address**

SOPUS Products
P.O. Box 4427
Houston, TX 77210-4427

| ADMINISTRATIVE INFORMATION | |
|---|---|
| **MANUFACTURER ADDRESS:** | SOPUS Products, P.O. Box 4427, Houston, TX. 77210-4427 |

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43747-11639-100R-08/22/2005

# Material Safety Data Sheet

**Windshield Washer Antifreeze (-20)** **Revised 01/04**

## I. General Information

| | |
|---|---|
| Chemical Name & Synonyms: | **Windshield Washer Antifreeze (-20)** |
| Chemical Family: | Alcohol |
| Trade Name: | MSDS Applies to all Windshield Washer Antifreeze –20, Regardless of Brand or Trade Name |
| Formula: | Methanol/Surfactant Polyo/lColor/Water<br>>1 Gallon: Flammable Liquid, N.O.S. |
| Hazard Class: | ORM-D; In quantities > 1 Gallon: Class 3 |
| HMIS Rating: | Health-1; Flammability-3; Reactivity-0 |


***Manufacturer:*** ***South\Win, Ltd.***
***606 Walters Street***
***Reidsville, NC 27320***
***(336) 348-1808***
***CHEMTREC:*** ***(800) 424-9300***


## II. Ingredients

| COMPONENTS | | PERCENT BY VOLUME |
|---|---|---|
| Methanol | CAS # 67-56-1 | 33%-36% |
| Surfactant Polyol | CAS# 9003-11-6 | <1% |
| Color | CAS # 3486-30-4 | <1% |
| Water | | 64-67% |

## III. Physical Data

| | |
|---|---|
| Boiling Point ($^{O}$F): | 183 deg F |
| Vapor Pressure (mm Hg.): | 38-45 @ 20 deg. C |
| Vapor Density (Air=1): | 1.1 |
| Solubility in Water: | Complete |
| Appearance & Odor: | Transparent colored (usu. blue) liquid, mild alcohol odor |
| Specific Gravity ($H_2O$ =1): | @ deg. C, 0.950-0.952 |
| Percent Volatile By Volume (%): | 32% |
| Evaporation Rate(n-Butyl Acetate =1): | n/a |

## IV. Fire & Explosion Data

| | |
|---|---|
| Flash Point (Test Method): | Tag closed cup: 101 deg. F |
| Extinguishing Media: | Water fog, chemical foam, dry chemical powder, Carbon dioxide. |
| Special Fire Fighting Procedure: | Wear self-contained breathing apparatus when fire fighting in confined space. |
| Unusual Fire & Explosion Hazards: | Combustion will produce carbon monoxide and asphyxiants. |

## V. Health Hazard Data

| | |
|---|---|
| ACGIH Threshold Limit Value | 800 ppm |
| Symptoms of Exposure: | Early to moderate CNC depression may be evidenced by giddiness, headache, dizziness, and nausea. |
| EMERGENCY FIRST AID: | Inhalation: None normally required.<br>Skin: Flush with water.<br>Eye: Flush with water for 15 minutes. If required, seek medical assistance.<br>Ingestion: Do not give liquids if unconscious or drowsy. Otherwise, induce vomiting. Seek medical attention. |

## VI. Reactivity Data

| | |
|---|---|
| Stability: | Stable |
| Conditions To Avoid: | Avoid heat, sparks, flame and contact with strong oxidizing agents. |
| Incompatibility: | Strong oxidizers |
| Hazardous Polymerization: | Will not occur. |
| Hazardous Decomposition Products: | Carbon monoxide and asphixiants |

## VII. Environmental Protection Procedures

Spill Response: Contain spill. Remove ignition sources. Evacuate unprotected personnel. Advise EPA and State and Local agenices if required. Absorb with inert material. Dispose of in accordance with all regulations.

Waste Disposal Method: Follow Federal, State, and Local regulation. Do not flush into drain or storm sewer. Contact authorize disposal service.

## VIII. Special Protection Information

| | |
|---|---|
| Eye Protection: | Splash proof chemical safety goggles. |
| Skin Protection: | If contact is unavoidable, wear appropriate impervious clothing. Launder soil clothing before reuse. |
| Respiratory Protection (Specific Type) | None under normal conditions. If required to maintain exposure limits use either supplied air respirator and/or air purifying respirator for organic vapors. |
| Ventilation Recommended: | Not normally required. |

## IX. Special Precautions

Hygienic Practices In Handling & Storage: Material should be stored in closed original container.

***********End Of MSDS*********

**Key**: N/A Not Applicable
ND Not Determined

**The information contained herein is based on the data available to us and is believed to be correct. However, the MFG and/or the prepare makes no warranty, expressed or implied, regarding the accuracy of this information or the results to be obtained from the use thereof. The MFG assumes no responsibility for injury from the use of the product**

# SAFETY DATA SHEET

Effective Date: 06/01/2015
Replaces 05/01/2012

# Hot-Mix Asphalt

## 1. Identification

**Product name:**
Hot-Mix Asphalt

**Other means of identification/Synonyms/Common Names:**
Black Base, Blacktop, CMHB (all types), Hot Mix (all types; may contain rap), Hot-Mix Paving Material, Petroleum-derived Asphalt Concrete

**Recommended use:**
Hot-Mix Asphalt is used as a construction material.

**Recommended restrictions:**
None Known

**Manufacturer/Contact info:**
Vulcan Materials Company and its subsidiaries and affiliates
1200 Urban Center Drive
Birmingham, AL 35242

**General Phone Number:**
1.866.401.5424

**Emergency Phone Number:**
1.866.401.5424 (3E Company, 24hours/day, 7 Days/week)

**Website:**
www.vulcanmaterials.com

## 2. Hazard(s) Identification

**Physical hazards:**
Not Classified

**Health hazards:**
Carcinogenicity-Category 1A
Reproductive Toxicity- Category 2
Specific target organ toxicity, repeated exposure- Category 2



**Signal word:**

**Danger**

**Hazard statement**
May cause cancer (Inhalation)
Suspected of damaging the unborn child
Causes damage to organs (lung/respiratory system, adrenals, bone marrow, liver, lymph nodes, kidney, stomach and thymus) through prolonged or repeated exposure

**Precautionary statement:**

### Prevention

- Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.
- Do not breathe dust, fume, or vapors. Use only outdoors or in a well ventilated area.
- Wash hands thoroughly after handling.
- Do not eat, drink or smoke when using this product.
- Use personal protective equipment as required. Wear protective gloves, protective clothing, eye protection, and face protection.
- Product may contain or release hydrogen sulfide, which is highly toxic and is a flammable gas. Assessment of storage tanks, transport vessels and other confined spaces should be made to determine potential exposures and appropriate controls

### Response

- If exposed or concerned: Immediately call a Poison Center or doctor/physician. Get medical advice/attention
- Specific treatment (see the following information on this label).
- IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
- IF ON SKIN: Remove/Take off immediately all contaminated clothing. Rinse cautiously with water for several minutes. Rinse skin with water/shower. If skin irritation occurs: Get medical advice/attention.
- IF INHALED: Remove victim to fresh air and keep at rest position comfortable for breathing.

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

**Storage**

- Store in a well ventilated place.

**Disposal**

- Dispose of contents/container in accordance with all local, regional, national, and international regulations.

**Supplemental information:**

Heated material can cause thermal burns. Fumes from heated asphalt may be irritating to the eye, nose and throat. Hot-Mix Asphalt contains aggregate, a naturally occurring mineral complex with varying quantities of quartz (crystalline silica). Respirable Crystalline Silica (RCS) may cause cancer. Hardened product may be subjected to various natural or mechanical forces that produce small particles (dust) which may contain respirable crystalline silica (particles less than 10 micrometers in aerodynamic diameter). Repeated inhalation of respirable crystalline silica (quartz) may cause lung cancer according to IARC, NTP; ACGIH states that it is a suspected cause of cancer.

## 3. Composition/information on ingredients

| Chemical name | CAS number | % |
|---|---|---|
| Aggregate (crushed stone, sand, gravel, slag) | Mixture | >90 |
| Quartz (crystalline silica) | 14808-60-7 | >1 |
| Asphalt | 8052-42-4 | <10 |
| May contain: | | |
| Vacuum tower bottoms | 64741-56-6 | >0.1 |
| Heavy naph. Petroleum distillates | 64741-53-3 | >0.1 |
| Aromatic extract oil | 64742-11-6 | >0.1 |
| Heavy Para. distillate solvent extract | 64742-04-7 | >0.1 |
| Hydrogen sulfide | 7783-06-4 | <0.2 |
| Additives | Mixture | <1 |

## 4. First-aid measures

**Inhalation:**

Remove person to fresh air. If lung irritation persists or later develops, contact a physician. If not breathing, initiate rescue breathing, give oxygen by trained personnel and get immediate medical attention. Do not attempt to rescue victim from confined spaces without adequate protective equipment.

**Eyes:**

Immediately flush eye(s) with plenty of clean water for at least 15 minutes, while holding the eyelid(s) open. Occasionally lift the eyelid(s) to ensure thorough rinsing. Beyond flushing, do not attempt to remove material from eye(s). Contact a physician if irritation persists or later develops. Thermal burns require immediate medical attention.

**Skin:**

Hot Material: Remove contaminated clothing, if possible, and immediately flush skin in cool water for at least 15 minutes. Iced water or cold packs may be applied to burned area. Do not attempt to remove material from a burn. Get immediate medical attention. Cold Material: Clean exposed skin with soap or mild detergent and large amounts of water until all material is removed from the skin. Do not use solvents or thinners to remove material from skin.

**Ingestion:**

If swallowed, do not induce vomiting. Drink a large volume of water and get immediate medical attention. Never give anything by mouth to an unconscious person. If vomiting occurs, keep head lower than hips to prevent aspiration.

**Most important symptoms/effects, acute and delayed:**

Emissions from the heated material may have an unpleasant odor and may cause moderate to severe irritation of the mucous membranes and upper respiratory tract, headaches, nausea and dizziness. Toxic hydrogen sulfide gas may be released. Do not depend upon sense of smell for warning of overexposure, since the gas causes rapid olfactory fatigue which deadens the sense of smell at levels as low as 50 ppm. Unconsciousness and asphyxiation may occur in poorly ventilated or confined spaces. See Section 11 for additional information.

Breathing silica-containing dust for prolonged periods in the workplace can cause lung damage and a lung disease called silicosis. Symptoms of silicosis may include (but are not limited to) shortness of breath, difficulty breathing with or

without exertion; coughing; diminished work capacity; diminished chest expansion; reduction of lung volume; right heart enlargement and/or failure.

**Indication of immediate medical attention and special treatment needed:**

In general, emesis induction is unnecessary in high viscosity, low volatility products. Inhalation exposure of hydrogen sulfide may result in pulmonary congestion. Patients may be predisposed to pneumonia during convalescence, and should be kept under observation. Contact a Poison Center for additional treatment information.

Not all individuals with silicosis will exhibit symptoms of the disease. However, silicosis can be progressive, and symptoms can appear at any time, even years after exposures have ceased. Persons with silicosis have an increased risk of pulmonary tuberculosis infection.

**For emergencies contact 3E Company at 1.866.401.5424 (24 hours/day, 7 days/week).**

## 5. Fire-fighting measures

**Suitable extinguishing media:**

Agents approved for Class B hazards (e.g., dry chemical, carbon dioxide, halogenated agents, foam, and steam) and water fog.

**Unsuitable extinguishing media:**

Avoid use of straight-stream water. Adding water to hot asphalt presents an explosion hazard.

**Specific hazards arising from the chemical:**

Do not heat above flash point.

Fumes/vapors can explode when concentrated in an enclosed environment and supplied with an ignition source. Never weld or use a cutting torch or open flame on a full, partially full or empty bin, hopper, or other container that holds or has held asphaltic material unless precautions are taken to prevent explosion. WARNING: Hydrogen sulfide ($H_2S$) and other hazardous gases/vapors may evolve and collect in the headspace of storage tanks or other enclosed vessels, and can create an explosive, toxic, or oxygen deficient atmosphere. $H_2S$ gas is extremely flammable and can explode if an ignition source is provided. See Section 11 for health effects of $H_2S$ gas.

**Special protective equipment and precautions for firefighters:**

Avoid breathing irritating and potentially toxic fumes, including hydrogen sulfide gas. Firefighters should wear NIOSH/MSHA approved positive pressure breathing apparatus (SCBA) with full face mask and full protective equipment.

**Fire-fighting equipment/instructions:**

Adding water to hot asphalt presents an explosion hazard.

**Specific methods:**

Use water spray to keep fire-exposed containers cool.

## 6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures:**

Ventilate area and avoid emission inhalation or skin contact by using appropriate precautions outlined in this SDS (see Section 8). Keep all sources of ignition at least 50 feet away. Prevent materials from entering streams, drainages, or sewers. Spills entering surface waters or sewers entering/leading to surface waters must be reported to the National Response Center 1-800-424-8802. Based on volume and use, components of this product may be subject to reporting requirements of Title III of SARA, 1986, and 40 CFR 372.

**For emergencies, contact 3E Company at 1-866-401-5424 (24 hours/day, 7 days/week)**.

**Environmental precautions:**

Stop leak and contain spilled material with sand, aggregate fines, or other inert adsorbent. Collect adsorbed product and clean up materials in appropriate container for proper disposal. Notify proper authorities.

**Methods and materials for containment and cleaning up:**

Contact the asphalt plant to determine feasibility of recycling material. Dispose of waste materials in accordance with applicable federal, state and local laws and regulations.

## 7. Handling and storage

**Precautions for safe handling:**

Follow personal protection and protective controls set forth in Section 8 of this SDS when handling this product. If personnel must enter a tank or other confined space that contained this material, follow the OSHA Confined Space Entry Program as specified in 29 CFR 1910.146. Do not store near food, beverages or smoking materials. Avoid personal contact with heated material. Respirable crystalline silica-containing dust may be generated when hardened asphalt mix is subjected to mechanical forces, such as demolition work, surface treatment (sanding, grooving, chiseling, etc.), and/or recycling of pavement.

Do not attempt to clean empty containers since residue is difficult to remove. Do not pressurize, cut, weld, braze, solder, drill, grind or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition as they may explode and cause injury or death. Tripping accidents have occurred because of asphalt buildup on bottoms of shoes and boots; buildup should be removed regularly to prevent such accidents. Do not use solvents or thinners to clean footwear.

**Conditions for safe storage, including any incompatibilities:**

Store away from all ignition sources and open flames in accordance with applicable laws and regulations.

Vapors containing hydrogen sulfide may accumulate during storage or transport of asphaltic materials. When petroleum asphalt products are heated, potentially irritating emissions (fumes, mists, vapors) may be released.

## 8. Exposure controls/personal protection

**Legend:**

NE = Not Established; PEL = Permissible Exposure Limit; TLV = Threshold Limit Value; REL = Recommended Exposure Limit; STEL= Short Term Exposure Limit; OSHA = Occupational Safety and Health Administration; MSHA = Mine Safety and Health Administration; NIOSH = National Institute for Occupational Safety and Health; ACGIH = American Conference of Governmental Industrial Hygienists

| Component | OSHA/MSHA PEL | ACGIH TLV | NIOSH REL |
|---|---|---|---|
| Asphalt Fumes | NE | 0.5 $mg/m^3$ (as benzene-soluble aerosol) | Ceiling 5 ppm |
| Particulates not otherwise classified | 15 $mg/m^3$ (total dust)<br>5 $mg/m^3$ (respirable fraction) | 10 $mg/m^3$ (inhalable fraction)<br>3 mg/m3 (respirable fraction) | NE |
| Respirable dust containing silica | 10 $mg/m^3$÷ (% silica + 2) | Use Respirable Silica TLV | Use Respirable Silica TLV |
| Total dust containing silica | OSHA: 30 $mg/m^3$ ÷ (% silica + 2)<br>MSHA: 30 $mg/m^3$ ÷ (% silica + 3) | NE | NE |
| Respirable Crystalline Silica (quartz) | NE - Use respirable dust containing silica PEL | 0.025 $mg/m^3$ | 0.05 $mg/m^3$ |
| Respirable Tridymite and Cristobalite (other forms of crystalline silica) | ½ of OSHA and MSHA respirable dust containing silica PEL | 0.025 $mg/m^3$ | 0.05 $mg/m^3$ |
| Ammonia ($NH_3$) | 50 ppm | 25 ppm<br>STEL 35 ppm | 25 ppm<br>Ceiling 35 ppm |
| Carbon Monoxide (CO) | 50 ppm | 25 ppm | 35 ppm<br>Ceiling 200 ppm |
| Hydrogen Sulfide ($H_2S$) | Ceiling 20 ppm | 10 ppm<br>STEL 15 ppm | Ceiling 10 ppm |
| Nitrogen Dioxide ($NO_2$) | Ceiling 5 ppm | 3 ppm<br>STEL 5 ppm | STEL 1 ppm |
| Ozone ($O_3$) | 0.1 ppm | 0.05 ppm | Ceiling 0.1 ppm |
| Sulfur Dioxide ($SO_2$) | 5 ppm | STEL 0.25 ppm | 2 ppm<br>STEL 5 ppm |

**Exposure Guidelines:**
Workers should station themselves on the upwind side of asphalt emissions when possible. It is recommended that asphalt emissions be monitored regularly to determine exposure levels. Respirable dust and quartz levels should be monitored regularly to determine worker exposure levels. Exposure levels in excess of appropriate exposure limits must be reduced by all feasible engineering controls, including (but not limited to), ventilation, process enclosure, and/or enclosed employee workstations.

**Engineering Controls:**
General dilution or local exhaust ventilation is required to maintain exposures below appropriate exposure limits. Use only in well-ventilated areas. Activities with dried/hardened product that generate dust require the use of general ventilation, local exhaust and/or wet suppression methods to maintain exposures below appropriate exposure limits.

**Eye Protection:**
Use a full-face shield and chemical safety goggles if handling heated material. Safety glasses with side shields should be worn as minimum protection at ambient temperatures. Contact lens should not be worn when eye contact with product is possible.

**Skin Protection (Protective Gloves/Clothing):**
Avoid skin contact with material by wearing impervious gloves and protective clothing. With product at ambient temperatures, use disposable nitrile, neoprene or butyl rubber material. When handling hot material, use heat-resistant gloves. Use insulated, heat-resistant clothing as necessary.

**Respiratory Protection:**
Not expected to be necessary under normal use and working conditions. All respirators must be NIOSH-approved for the exposure levels present. (See NIOSH Respirator Selection Guide). The need for respiratory protection should be evaluated by a qualified safety and health professional. For air-contaminant concentrations which exceed or are likely to exceed applicable exposure limits, use a NIOSH-approved, contaminant-specific, air purifying respirator. If such conditions are sufficiently high that the air-purifying respirator is inadequate, or if oxygen adequate to sustain life is not present, use a positive-pressure, self-contained breathing apparatus. Activities that generate dust require the use of an appropriate dust respirator where dust levels exceed or are likely to exceed allowable exposure limits. For respirable silica levels that exceed or are likely to exceed an 8-hour Time Weighted Average (TWA) of 0.5 $\mathrm{mg/m^3}$, a high-efficiency particulate filter respirator must be worn at a minimum; however, if respirable silica levels exceed or are likely to exceed an 8-hour TWA of 5.0 $\mathrm{mg/m^3}$ a positive-pressure, full-face respirator or equivalent is required. Respirator use must comply with applicable MSHA (42 CFR 84) or OSHA (29 CFR 1910.134) standards, which include provisions for a user training program, respirator inspection, repair and cleaning, respirator fit testing, medical surveillance and other requirements.

## 9. Physical and chemical properties

**Appearance:**
Black, viscous, granular.

| | | |
|---|---|---|
| **Odor:**<br>Petroleum odor. | **PH:**<br>Not applicable | **Decomposition temperature:**<br>Not applicable |
| **Melting point/freezing point:**<br>100-135°F | **Initial boiling point and boiling range:**<br>470°C | **Flash point:**<br>>500°F (min). COC |
| **Evaporation rate:**<br>Not applicable | **Flammability:**<br>Not applicable | **Upper/lower flammability or explosive limits:**<br>Not applicable |
| **Vapor pressure:**<br>Not applicable | **Vapor density:**<br>>1 | **Solubility:**<br>Negligible |
| **Partition coefficient: n-octanol/water.**<br>Not applicable | **Autoignition temperature:**<br>Not applicable | **Specific Gravity ($H_2O$ = 1):**<br>2.0 -2.5 |

## 10. Stability and reactivity

**Reactivity:**
Not reactive under normal use.

**Chemical stability:**
Stable under normal temperatures and pressures.

**Possibility of hazardous reactions:**
None under normal use.

**Conditions to avoid (e.g., static discharge, shock or vibration):**
Keep away from direct flame/ignition sources. Contact with incompatible materials should be avoided (see below). See Sections 5, 6 and 7 for additional information.

**Incompatible materials:**
Strong oxidizers may react with hydrocarbons. Contact with fluorine may cause burning or explosion. Adding water to hot asphalt presents an explosion hazard.

**Hazardous decomposition products:**
Carbon monoxide and other compounds (such as amines, ammonia, nitrogen dioxide, sulfur dioxide, ozone, hydrogen sulfide, and various hydrocarbons) may be released by thermal decomposition. Hazardous vapors can collect in enclosed vessels or areas if not properly ventilated. If hydrogen sulfide is present, the flammable limits range from 4.3 to 45.5% by volume and its presence may promote the formation of pyrophoric (spontaneously igniting) iron compounds (See 29 CFR 1910.146). Silica-containing respirable dust particles can be generated. When heated, quartz is slowly transformed into tridymite (above 860°C/1580°F) and cristobalite (above 1470°C/2678°F).

## 11. Toxicological information

**Primary Routes of Exposure:**
Inhalation and contact with the eyes and skin.

**Symptoms related to the physical, chemical, toxicological characteristics**
**Inhalation:**
Fumes, mists or vapors may cause respiratory irritation. Contains or may release hydrogen sulfide gas ($H_2S$), which may accumulate in confined spaces. $H_2S$ fumes and vapors may be harmful or fatal if inhaled. Breathing silica containing dust for prolonged periods in the workplace can cause lung damage and lung disease called silicosis. Several scientific organizations have classified crystalline silica as causing lung cancer in humans. Silicosis and lung cancer can result in permanent injury or death.

**Eye Contact:**
Direct contact with hot material can cause severe thermal burns. Hardened material may scratch the eye causing tearing, redness and a stinging sensation. Fumes, vapors or mists may be irritating.

**Skin Contact:**
Direct contact with hot material can cause severe thermal burns. Hardened material may cause irritation due to abrasive effects.

**Ingestion:**
Direct contact with heated material can cause severe thermal burns. Asphalt has a low toxicity when ingested, however, chewing and swallowing asphalt may cause gastrointestinal effects. Gastric masses (Bezoars) and stomach (pyloric) obstructions have been reported in individuals who have chewed and swallowed asphalt.

**Medical Conditions Aggravated by Exposure:**
Pre-existing medical conditions that may be aggravated by exposure include disorders of the eye, skin and/or lung (including asthma and/or other breathing disorders).

**Delayed and immediate effects and also chronic effects from short- and long-term exposure:**
Prolonged and repeated exposure to asphalt may cause skin disorders such as dermatitis, folliculitis, and acne-like lesions, or more rarely, pigmentation of the skin. Chronic inhalation of high concentrations of asphalt emissions may cause chronic bronchitis and pneumonitis (inflammation of the lungs). In mice, there was damage to the lungs, including bronchitis, pneumonitis, and abscess formation. Guinea pigs and rats showed pneumonitis, peribronchial adenomatosis, and some squamous cell metaplasia.

This material contains heavy vacuum distillates/aromatic extract oils. Repeated dermal application of these oils to experimental animals has been reported to cause skin disorders, effects on the adrenals, bone marrow, liver, lymph nodes, kidney, stomach and thymus as well as fetal death and birth defects.

Repeated exposure to low levels of $H_2S$ may cause eye effects including conjunctivitis and corneal injury. There is no evidence that $H_2S$ will accumulate in the body tissue.

The following information applies to the dried product if it is subjected to mechanical forces (such as demolition or asphalt recycling work), which may generate crystalline silica-containing dust particles:

Prolonged overexposure to respirable dusts in excess of appropriate exposure limits can cause inflammation of the lung leading to possible fibrotic changes, a medical condition known as pneumoconiosis.

Prolonged and repeated inhalation of respirable crystalline silica-containing dust in excess of allowable exposure limits may cause a chronic form of silicosis, an incurable lung disease that may result in permanent lung damage or death. Chronic silicosis generally occurs after 10 years or more of overexposure; a more accelerated type of silicosis may occur between 5 and 10 years of higher levels of exposure. In early stages of silicosis, not all individuals will exhibit symptoms (signs) of the disease. However, silicosis can be progressive, and symptoms can appear at any time, even years after exposure has ceased. Symptoms of silicosis may include, but are not limited to, the following: shortness of breath; difficulty breathing with or without exertion; coughing; diminished work capacity; diminished chest expansion; reduction of lung volume; right heart enlargement and/or failure. Persons with silicosis have an increased risk of pulmonary tuberculosis infection.

Repeated overexposures to very high levels of respirable crystalline silica (quartz, cristobalite, tridymite) for periods as short as six months may cause acute silicosis. Acute silicosis is a rapidly progressive, incurable lung disease that is typically fatal. Symptoms include, but are not limited to, shortness of breath, cough, fever, weight loss, and chest pain. Respirable dust containing newly broken silica particles has been shown to be more hazardous to animals in laboratory tests than respirable dust containing older silica particles of similar size. Respirable silica particles which had aged for sixty days or more showed less lung injury in animals than equal exposures of respirable dust containing newly broken particles of silica.

There are reports in the literature suggesting that excessive crystalline silica exposure may be associated with autoimmune disorders and other adverse health effects involving the kidney. In particular, the incidence of scleroderma (thickening of the skin caused by swelling and thickening of fibrous tissue) appears to be higher in silicotic individuals. To date, the evidence does not conclusively determine a causal relationship between silica exposure and these adverse health effects.

**Carcinogenicity:**

Skin application of asphalt fume condensate fractions caused skin tumors in laboratory mice. When asphalt was dissolved or mixed with a solvent prior to exposing laboratory animals, the carcinogenicity results were weakly positive. The causal agent is thought to be 4 to 6 ring polycyclic aromatic compounds (PAH). Trace amounts of these materials may be present in asphalts and can be generated upon excessive heating. Some PAHs have been identified as causing carcinogenic and reproductive effects. Currently, epidemiological evidence does not support a link between asphalt exposure and human skin cancer.

Repeated breathing of asphalt emissions has not resulted in a carcinogenic response in laboratory animal testing. Although epidemiological studies on asphalt workers have suggested a possible link between asphalt fumes and certain types of cancer, confounding factors such as smoking and concomitant exposure to other agents in the workplace may have influenced the results of these studies. Asphalt is not listed as a carcinogen by the National Toxicology Program (NTP) or the Occupational Safety and Health Administration (OSHA). IARC states that there is sufficient evidence that extracts (asphalts dissolved in hydrocarbon solvents) are carcinogenic to laboratory animals and recently the agency determined that occupational exposures to oxidized asphalt and their emissions during roofing applications are "probably carcinogenic to humans "(Group 2A). They also determined that occupation exposures to hard asphalts and their emissions during mastic asphalt work and occupational exposures to straight-run asphalts and their emissions during paving operations are "possibly carcinogenic to humans" (Group 2B)

This material contains heavy vacuum distillates/aromatic extract oils. IARC has determined that there is sufficient evidence in experimental animals for their carcinogenicity, and has classified these oils as Group 1, or human carcinogens.

The following information applies to the dried product if it is subjected to mechanical forces (such as demolition or asphalt recycling work), which may generate crystalline silica-containing dust particles:

Epidemiology studies on the association between crystalline silica exposure and lung cancer have had both positive and

negative results. There is some speculation that the source and type of crystalline silica may play a role. Studies of persons with silicosis indicate an increased risk of developing lung cancer, a risk that increases with the level and duration of exposure. It is not clear whether lung cancer develops in non-silicotic patients. Several studies of silicotics do not account for lung cancer confounders, especially smoking, which have been shown to increase the risk of developing lung disorders, including emphysema and lung cancer.

In October 1996, an IARC Working Group designated respirable crystalline silica as carcinogenic (Group 1). The NTP's Report on Carcinogens, 9th edition, lists respirable crystalline silica as a "known human carcinogen." In the year 2000, the American Conference of Governmental Industrial Hygienists (ACGIH) listed respirable crystalline silica (quartz) as a suspected human carcinogen (A-2). These classifications are based on sufficient evidence of carcinogenicity in certain experimental animals and on selected epidemiological studies of workers exposed to crystalline silica.

**Additional information on toxicological-effects:**

**Acute toxicity:** Not classified

No specific data on product. Based on components, not expected to be classified for acute toxicity.

Asphalt:
Acute Oral, rat: LD50 >5000 mg/kg
Acute Dermal, rat: LD50 >2000 mg/kg

**Skin corrosion/irritation:** Not classified

**Serious eye damage/eye irritation:** Not classified

**Respiratory sensitization:** Not classified.

**Skin sensitization:** May cause photosensitization (contact), but not classified as a skin sensitizer.

**Germ cell Mutagenicity:** Not classified

**Carcinogenicity:** May cause cancer (Inhalation).

**Reproductive toxicity:** Suspected of damaging the unborn child.

**Specific target organ toxicity - single exposure:** Not classified

**Specific target organ- toxicity – repeated exposure:** Causes damage to organs (lungs, respiratory system, adrenals, bone marrow, liver, lymph nodes, kidney, stomach and thymus) through prolonged or repeated exposure (inhalation)

**Aspiration toxicity:** Not classified (not applicable- solid material)

## 12. Ecological information

**Ecotoxicity (aquatic and terrestrial, where available):**
No specific data on this product. Large spills may cause damage to aquatic organisms though fouling of the shoreline.

**Persistence and degradability:**
Expected to be resistant to biodegradation.

**Bioaccumulative potential.**
Significant migration into the environment and bioaccumulation are unlikely.

**Mobility in soil.**
Not determined

**Other adverse effects.**
Not determined

## 13. Disposal considerations

**Safe handling and disposal of waste:**

Place contaminated materials in appropriate containers and dispose of in a manner consistent with applicable federal, state, and local regulations. Prevent from entering drainage, sewer systems, and unintended bodies of water. It is the responsibility of the user to determine, at the time of disposal, whether product meets criteria for hazardous waste. Product uses, transformations, mixture and processes, may render the resulting material hazardous.

## 14. Transport information

**UN Number:**

Not regulated.

**UN Proper shipping name:**

Not regulated.

**Transport Hazard class:**

Not applicable.

**Packing group, if applicable:**

Not applicable.

**Marine pollutant (Yes/No):**

Not applicable.

## 15. Regulatory information

**Toxic Substances Control Act (TSCA):**

The components in this product are listed on the TSCA Inventory or are exempt.

**Comprehensive Environmental Response, Compensation and Liability Act (CERCLA):**

Releases of this material to water may be reportable to the National Response Center under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) or to state and local emergency planning committees under the Superfund Amendments and Reauthorization Act. (See Section 6)

**Superfund Amendments and Reauthorization Act of 1986 (SARA), Title III:**

Section 302 extremely hazardous substances: None

Section 311/312 hazard categories: Delayed Health

Section 313 reportable ingredients at or above de minimus concentrations: None

**California Proposition 65:**

This product contains a chemical (crystalline silica, bitumen, various aromatic hydrocarbons) known to the State of California to cause cancer and birth defects or other reproductive harm.

**State Regulatory Lists:**

Each state may promulgate standards more stringent than the federal government. This section cannot encompass an inclusive list or all state regulations. Therefore, the user should review the components listed in Section 2 and consult state or local authorities for specific regulations that apply.

**16. Other information**

**Disclaimer**

**NO WARRANTY IS MADE, EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE.**

Vulcan Materials Company and its subsidiaries and affiliates ("Vulcan") believe the information contained herein is accurate; however, Vulcan makes no guarantees with respect to such accuracy and assumes no liability whatsoever in connection with the use of any information contained herein by any party. The provision of the information contained herein is not intended to be, and should not be construed as, legal advice or as ensuring compliance with any federal, state, or local laws, rules or regulations. Any party using any information contained herein should review all applicable laws, rules and regulations prior to use.

**Issue date:**
06/01/2015

**Revision date:**
06/01/2015

**Vulcan Materials Company and its subsidiaries and affiliates**
**1200 Urban Center Drive**
**Birmingham, AL 35242**

Vulcan
Materials Company

Dear Customer/Contractor:

Please find attached a safety data sheet (SDS) for the product that you purchased from Vulcan Materials Company or one of its subsidiaries or affiliates ("Vulcan"). This is a revised SDS and replaces any previous versions of the material safety data sheet (MSDS) for this product. This SDS is provided to you as required by the Occupational Safety and Health Administration's (OSHA) Hazard Communication Standard (29 CFR 1910.1200), the Mine Safety and Health Administration's (MSHA) Hazard Communication Standard (30 CFR Part 47), and/or any applicable state Right-to-Know laws.

It is the responsibility of your company to communicate this information to your employees, customers, and contractors who may use or come in contact with this product. Further, if you distribute this product, Vulcan requests, and applicable laws may require, that you forward this SDS to your customers.

Please direct this information to the person responsible for safety and health compliance at your company. If you have questions about the SDS, please contact Vulcan at 1200 Urban Center Drive, Birmingham, AL 35242 or 1-866-401-5424.

If you need additional copies of this or any other Vulcan SDS or a Spanish language version, you can obtain them at www.vulcanmaterials.com or by calling 1-866-401-5424.

La MSDS puede obtenerse en www.vulcanmaterials.com o llamando al 1-866-401-5424.

Sincerely,

Cynthia Kirby

Cynthia Kirby
Director, Safety & Health

## SECTION 1: IDENTIFIFICATION

**Product Identifier**

*Product Form:* Mixture

*Product Name:* RS-1h

**Intended Use of the Product**

*Use of the substance/mixture:* Tack Coat

**Name, Address, and Telephone of the Responsible Party**

*Company:* All States Asphalt, Inc. & Subsidiaries
325 Amherst Road
Sunderland, MA 01375
413-665-7021
www.asmg.com

*Manufacturer:* New England Emulsions Corp.
201 Lowland ST.
Holliston, MA 01746
508-429-5550

**Emergency Telephone Number**

*Emergency Number:* 800-424-9300

## SECTION 2: HAZARDS IDENTIFICATION

*Physical Hazards:* Not classified.
*Health Hazards:* Not classified.
*Environmental Hazards:* Not classified.
*OSHA Defined Hazards:* Not classified.

**Label Elements**

| | |
|---|---|
| *Hazard Pictograms (GHS-US)* | None |
| *Signal Word (GHS-US)* | None |
| *Hazard Statements (GHS-US)* | This mixture does not meet the criteria for classification. |
| *Prevention* | Observe good industrial hygiene practices. |
| *Storage* | Store away from incompatible materials. |
| *Disposal* | Dispose of waste and residues in accordance with local authority requirements. |

**Hazard(s) not otherwise classified (HNOC)**

None known.

**Supplemental information**

Vapors containing hydrogen sulfide may accumulate during storage or transport. HYDROGEN SULFIDE (H2S) can be harmful or fatal if inhaled.

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

**Substance**

Not applicable

**Mixture**

| *Name* | *Product Identifier* | *%* |
|---|---|---|
| Asphalt | (CAS No) 8052-42-4 | 55 – 65 |
| Water | (CAS No) 7732-18-5 | 35 – 45 |

* Components not listed are either non-hazardous or below the required disclosure threshold

## SECTION 4: FIRST AID MEASURES

**Description of First Aid Measures**

*Inhalation:* Remove to fresh air and keep at rest in a position comfortable for breathing. Consult a physician if you feel unwell.

*Skin Contact:* Rinse immediately with plenty of water. Remove contaminated clothing. Consult a physician if you feel unwell. Do not attempt to forcibly remove material from skin after cooling. DO NOT use solvents or thinners.

*Eye Contact:* Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

*Ingestion:* Rinse mouth. DO NOT induce vomiting. Get medical attention immediately. If ingestion of a large amount does occur, call a poison control center immediately.

**Most Important Symptoms and Effects, Both Acute and Delayed**

Direct contact with eyes may cause temporary irritation

**Indication of Any Immediate Medical Attention and Special Treatment Needed**

If exposed or concerned get medical advice and attention.

**General Information**

Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

## SECTION 5: FIRE-FIGHTING MEASURES

**Extinguishing Media**

*Suitable Extinguishing Media:* Foam. Dry chemical powder. Carbon dioxide (CO2).

*Unsuitable Extinguishing Media:* Water. Do not use water jet as an extinguisher, as this will spread the fire.

**Special Hazards Arising From the Substance or Mixture**

During fire, gases hazardous to health may be formed.

**Advice for Firefighters**

*Special Protective Equipment and Precautions for Firefighters:* Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Structural firefighters protective clothing will only provide limited protection.

*Firefighting Equipment/Instructions:* ALWAYS stay away from tanks engulfed in flame. Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Move containers from fire area if you can do so without risk. In the event of fire, cool tanks with water spray.

*Specific Methods*: In the event of fire and/or explosion do not breathe fumes. In the event of fire, cool tanks with water spray.

*General Fire Hazards*: No unusual fire or explosion hazards noted.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

**Personal Precautions, Protective Equipment and Emergency Procedures**

Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. For personal protection, see section 8 of the SDS.

**Methods and Material for Containment and Cleaning Up**

This product is miscible in water.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Prevent entry into waterways, sewer, basements or confined areas.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. Ventilate area and avoid breathing vapors or mist. For large spills, dike far ahead of liquid spill for later disposal. Do not release into sewers or waterways.

**Environmental Precautions**

Avoid discharge into drains, water courses or onto the ground.

## SECTION 7: HANDLING AND STORAGE

**Precautions for Safe Handling**

Avoid prolonged exposure. Use only in well-ventilated areas. Hydrogen sulfide, a very highly toxic gas, may be present with this material. Keep face clear of tank and/or tank car openings. Good personal hygiene is necessary. Wash hands and contaminated areas with water and soap before leaving the work site.

**Conditions for Safe Storage, Including Any Incompatibilities**

Prevent electrostatic charge build-up by using common bonding and grounding techniques. Store in original tightly closed container. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS). Do not allow material to freeze.

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

**Occupational exposure limits**

| *Asphalt (8052-42-4)* | | |
|---|---|---|
| USA ACGIH | ACGIH TWA (mg/m³) | 0.5 mg/m³ (fume, inhalable fraction) |
| USA ACGIH | ACGIH chemical category | Not Classifiable as a Human Carcinogen fume, coal tar-free |
| USA NIOSH | NIOSH REL (ceiling) (mg/m³) | 5 mg/m³ (fume) |

**Exposure Controls**

*Appropriate Engineering Controls* Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Ensure all national/local regulations are observed. Ensure

| | |
|---|---|
| | adequate ventilation, especially in confined areas. |
| *Personal Protective Equipment* | Protective clothing. Gloves. Safety glasses. |



| | |
|---|---|
| *Hand Protection* | Chemical resistant gloves are recommended. |
| *Skin and Body Protection* | Wear suitable protective clothing. |
| *Respiratory Protection* | If exposure limits are exceeded or irritation is experienced, approved respiratory protection should be worn. |
| *Consumer Exposure Controls* | Do not eat, drink or smoke during use. |

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

**Information on Basic Physical and Chemical Properties**

| | |
|---|---|
| *Physical State* | Liquid |
| *Appearance* | Brown |
| *Odor* | Mild Petroleum |
| *Odor Threshold* | No data available |
| *pH* | 7 – 11.3 |
| *Evaporation Rate* | No data available |
| *Melting Point* | No data available |
| *Freezing Point* | 32°F (0°C) |
| *Boiling Point* | 212°F (100°C) |
| *Flash Point* | >350°F (>177 °C) |
| *Auto-ignition Temperature* | No data available |
| *Decomposition Temperature* | No data available |
| *Flammability (solid, gas)* | No data available |
| *Vapor Pressure* | 24 mm Hg @ 77°F |
| *Relative Vapor Density at 20 °C* | No data available |
| *Relative Density* | No data available |
| *Specific Gravity* | 1.01 @ 60°F |
| *Solubility* | Water: Partially miscible |
| *Partition Coefficient: N-Octanol/Water* | No data available |
| *Viscosity* | No data available |

## SECTION 10: STABILITY AND REACTIVITY

*Reactivity:* The product is stable and non-reactive under normal conditions of use, storage and transport.
*Chemical Stability:* Stable under normal temperature conditions.
*Possibility of Hazardous Reactions:* Hazardous polymerization does not occur.
*Conditions to Avoid:* Avoid temperatures exceeding the flash point. Contact with incompatible materials. Do not overheat product.
*Incompatible Materials:* Strong oxidizing agents.
*Hazardous Decomposition Products:* Upon decomposition, this product may yield sulfur dioxide, carbon monoxide, carbon dioxide and/or low molecular weight hydrocarbons. Hydrogen sulfide.

## SECTION 11: TOXICOLOGICAL INFORMATION

**Information on Toxicological Effects**

*Acute Toxicity:* Not classified

| *Asphalt (8052-42-4)* | |
|---|---|
| LD50 Oral Rat | > 5000 mg/kg |
| LD50 Dermal Rabbit | > 2000 mg/kg |

*Skin Corrosion/Irritation:* Causes skin irritation.
*Serious Eye Damage/Irritation:* Causes serious eye irritation.
*Respiratory or Skin Sensitization:* May cause an allergic skin reaction.
*Germ Cell Mutagenicity:* Not classified
*Carcinogenicity:* Risk of cancer cannot be excluded with prolonged exposure.
*Reproductive Toxicity:* Not Classified
*Specific Target Organ Toxicity (Single Exposure):* Not classified
*Specific Target Organ Toxicity (Repeated Exposure):* Not classified
*Aspiration Hazard:* Not classified
*Symptoms/Injuries After Inhalation:* Inhalation of fumes or vapors may cause respiratory irritation.
*Symptoms/Injuries After Skin Contact:* May cause skin irritation. Prolonged or repeated contact with the skin may cause dermatitis.
*Symptoms/Injuries After Eye Contact:* May cause eye irritation.
*Symptoms/Injuries After Ingestion:* Ingestion is likely to be harmful or have adverse effects. May cause nausea, vomiting, and diarrhea.
*Chronic Symptoms:* Repeated or prolonged skin contact may cause dermatitis.

## SECTION 12: ECOLOGICAL INFORMATION

**Toxicity**

*Ecology – General:* Not expected to be harmful to aquatic organisms.

**Persistence and Degradability**

No additional information available

**Bioaccumulative Potential**

| *Asphalt (8052-42-4)* | |
|---|---|
| BCF fish 1 | (no bioaccumulation expected) |
| Log Pow | > 6 |

**Mobility in Soil**

No additional information available

**Other Adverse Effects**

No additional information available

## SECTION 13: DISPOSAL CONSIDERATIONS

**Waste treatment methods**

*Disposal Instructions:* Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose in accordance with all applicable regulations. No components are identified as hazardous wastes. Disposal recommendations are based on uncontaminated material.

*Local Disposal Regulations:* Dispose in accordance with all applicable regulations.

*Hazardous Waste Code:* The waste code should be assigned in discussion between the user, the producer and the waste disposal company. Not applicable.

*Waste From Residues / Unused Products:* Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions). Avoid discharge into water courses or onto the ground.

*Contaminated Packaging:* Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

## SECTION 14: TRANSPORT INFORMATION

**DOT**

Not regulated as dangerous goods.

**IMDG**

Not regulated as dangerous goods.

**IATA**

Not regulated as dangerous goods.

**Transport in Bulk According to Annex II of MARPOL 73/78 and the IBC Code**

Not available.

## SECTION 15: REGULATORY INFORMATION

**US Federal Regulations**

All components are on the U.S. EPA TSCA Inventory List.

| | |
|---|---|
| *TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)* | |
| Not regulated. | |
| *CERCLA Hazardous Substance List (40 CFR 302.4)* | |
| ASPHALT (CAS 8052-42-4) | Listed |
| *US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)* | |
| Not listed. | |
| *Superfund Amendments and Reauthorization Act of 1986 (SARA)* | |

| | |
|---|---|
| Hazard categories | Immediate Hazard - Yes<br>Delayed Hazard - Yes<br>Fire Hazard – Yes<br>Pressure Hazard - No<br>Reactivity Hazard - No |
| SARA 302 Extremely hazardous substance | Not listed |
| SARA 311/312 Hazardous chemical | No |
| SARA 313 (TRI reporting) | Not regulated |
| *Other federal regulations* | |
| Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List | 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**

WARNING: This product contains a chemical known to the State of California to cause cancer.

| |
|---|
| *US. Massachusetts RTK - Substance List* |
| Asphalt (CAS 8052-42-4) |
| *US. New Jersey Worker and Community Right-to-Know Act* |
| Asphalt (CAS 8052-42-4) |
| *US. Pennsylvania RTK - Hazardous Substances* |
| Asphalt (CAS 8052-42-4) |
| *US. California Proposition 65* |
| WARNING: This product contains a chemical known to the State of California to cause cancer. |
| *US - California Proposition 65 - CRT: Listed date/Carcinogenic substance* |
| ASPHALT (CAS 8052-42-4) Listed: January 1, 1990 |

## SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

*Revision Date* 05/27/2015

*Other Information* This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.

**Tri-Products, LLC**
171 Brownstone Avenue
Portland, CT 06480
860-342-1440
24 hour emergency 401-941-0500

# MATERIAL SAFETY DATA SHEET

## Asphalt Emulsion (Tack Coat)

**Grade:RS-1**

**Product code:**

**INGREDIENTS**

| Chemical Name | CAS | PEL/TLV |
|---|---|---|
| Asphalt | 8052-42-4 | 5mg/m3/8hrs |

WHILE THERE HAS BEEN NO DIRECT ASSOCIATION BETWEEN EXPOSURE TO ASPHALT AND CANCER IN HUMANS WE RECOMMEND A MINIMUM OF SKIN CONTACT AND OR BREATHING OF FUMES. PROLONGED OR REPEATED CONTACT OR BREATHING OF FUMES CAN BE HARMFUL. MATERIALS PRESENT IN ASPHALT HAVE CAUSED CANCER IN LABORATORY ANIMALS.

**PHYSICAL/CHEMICAL CHARACTERISTICS**

Boiling point: 212°F.
Specific Gravity @ 60°F: 1.01.
Vapor Pressure @100°F: 60 mm hg
Melting Point-Volatile % (water) 30-40
Solubility in Water: Dispersible (freezes below 33°F)
Appearance and Odor: Dark Brown Liquid

**FIRE/EXPLOSION HAZARD DATA**

Flash Point: N/A Flammable Limits:N/A LEL&UEL:N/A
Extinguishing Media: On dry asphalt use foam, water spray, $CO_2$, Dry Chemical.
Special Fire Fighting Procedures: Do not enter confined area without self contained breathing apparatus.
NFPA rating: Health 0; Flammability 1; Reactivity 0.
Unusual Fire and Explosion Hazards: Normal combustion forms carbon dioxide, water vapor and oxides of sulfur. Incomplete combustion can produce carbon monoxide.

## REACTIVITY DATA

Stable. No hazardous polymerization.
Avoid strong oxidant such as liquid chlorine, concentrated oxygen, sodium hypochlorite.
Hazardous Decomposition or Byproducts:
Fumes, smoke, carbon monoxide, hydrogen sulfide & sulfur oxides with incomplete combustion.

## HEALTH HAZARD DATA

There is inconclusive evidence as to whether asphalt is carcinogenic to humans. However components of asphalt have caused cancer in mice when heavily applied to skin and allowed to remain for lengthy periods of time. Also, asphalt fumes have been shown to be positive in ames mutagenicity tests. A minimum of skin contact and breathing is recommended.
Eye Contact: Flush with water. Skin contact: flush with water to cool skin, use soap & water to wash off material. Use mineral oil on dried material. Inhalation: remove to fresh air.

## PRECAUTIONS FOR SAFE HANDLING AND USE

Recover free liquid. Dike area to keep from waterways and sewers. Advise authorities if product does enter waterways and sewers. Dispose of absorbed material according to federal, state and local regulations at an approved site. Keep containers closed when not in use. Mix well before using. Keep from freezing. Use pressure to empty containers, containers still contain material which may ignite/explode.

## CONTROL MEASURES FOR ACCIDENTAL RELEASE AND RESPONSE

None needed when used with adequate ventilation.
Use impervious rubber gloves, goggles should be worn at all times, no other special protective clothing needed.
Asphalt stains should be removed with mineral oil followed by soap and water.

Revised: April, 2003

# MATERIAL SAFETY
# DATA SHEET

CONCRETE SEALANTS,INC.
P.O. BOX 176 NEW CARLISLE, OH 45344
9325 STATE ROUTE 201, TIPP CITY, OH 45371/ PHONE: 1-800-332-7325 or 937-845-8776

## SECTION1 PRODUCT IDENTIFICATION

**PRODUCT NAME:** CS-75
**PRODUCT CLASS:** Waterbased Adhesive/Surface Primer

## SECTION 2 HAZARDOUS INGREDIENTS

| Component | CAS No. | % by weight | Occupational Exposure Limits TLV | PEL | Vapor Pressure |
|---|---|---|---|---|---|

NO SIGNIFICANT HAZZARDS ASSOCIATED WITH THIS MATERIAL

## SECTION 3 PHYSICAL DATA

BOILING RANGE: 212 -344°F
EVAPORATION RATE: Slower than ether
VAPOR DENSITY: Heavier than air
% VOLATILE WEIGHT: 64
APPEARANCE: Orange Liquid
WT/GAL: 8.55 LBS.

## SECTION 4 FIRE AND EXPLOSION HAZARD DATA

Flash Point: >200°F (93°C) PMCC

**Extinguishing Media:** In case of fire, use water spray, foam, carbon dioxide, or dry chemical.

**Unusual Fire and Explosion Hazards:** The material will not support combustion unless the water has evaporated.

**Special Firefighting Procedures:** Water may be used to cool closed containers, to prevent pressure build-up.

**Firefighting Equipment:** Firefighters or others who may be exposed to products of combustion should wear full protective clothing including self-contained breathing apparatus. Equipment should be thoroughly decontaminated after use.

## SECTION 5 HEALTH HAZARD DATA

**Effects of Overexposure:**

**Eye Contact:** May cause irritation.
**Skin:** May cause irritation and drying of the skin.
**Ingestion:** May be harmful if swallowed. Ingestion may cause gastrointestinal irritation.
**Inhalation:** Concentrated vapors may be harmful. May cause dizziness, headache and nausea. May cause irritation to lungs, nose and throat.

**Medical Conditions Prone to Aggravation by Exposure:** None known.

**Primary Routes of Entry:** Dermal, eye contact, inhalation, ingestion.

TOXICITY:

Toxicity studies have not been conducted on this product and limited data are available in current scientific literature. However, toxicity information is available on other closely related acrylic multipolymer emulsions:

Results of single exposure (acute) studies conducted on a series of related product indicate that these materials are practically non-toxic orally (rats) or after skin applications (rabbits). They are practically non irritating to rabbit skin and are practically non irritating to rabbit eyes. No genetic effects were observed in standard tests using bacterial and animal cells.

Several related multipolymer emulsions were tested for potential to produce allergic skin reaction in controlled skin contact studies in human volunteers. These materials demonstrated a potential for cumulative irritation but primary irritation and allergic skin reactions were not observed.

No constituents are listed as carcinogens by NTP, IARC or OSHA.

EMERGENCY AND FIRST AID MEASURES:
**Splash (eyes):** Flush immediately with copious quantities of running water for at least 15 minutes. Consult physician. **Splash (skin):** Wash effected area with soap and water. Consult physician if irritation persists. **Ingestion:** Consult physician. **Inhalation:** If symptoms occur, remove to fresh air.

## SECTION 6 REACTIVITY DATA

STABILITY: Stable.

HAZARDOUS POLYMERIZATION: Will Not Occur.

HAZARDOUS DECOMPOSITION PRODUCTS: None

CONDITIONS TO AVOID: None known.

INCOMPATIBILITY (MATERIALS TO AVOID): None

## SECTION 7 SPILL OR LEAK PROCEDURE

**Steps To Be Taken In Case Material Is Released Or Spilled:** Contain large spills with dikes and transfer the material to appropriate containers for reclamation or disposal. Absorb remaining material or small spills with an inert material and then place in a chemical waste container. Flush residual spill area with water.

**Waste Disposal:** Dispose of in accordance with local, state and federal regulations.

This product is not a "hazardous waste" as that term is defined in the Resource Conservation and Recovery Act (RCRA), 40 CFR 261, "Identification and Listing of Hazardous Waste." After solidification, may be disposed of in a sanitary landfill licensed to receive non-hazardous waste.

## SECTION 8 SAFE HANDLING AND USE INFORMATION

**Respiratory Protection:** Avoid breathing vapor and/or mist. Use NOISH/MSHA approved respiratory protection equipment when airborne exposure is excessive. Consult respiratory manufacturer to determine appropriate type equipment for given application. Observe respirator use limitations specified by NOISH/MSHA or the manufacturer. Respirator protection programs must comply with 29 CFR 1910.143.

**Ventilation:** Provide natural or mechanical ventilation to minimize exposure. If practical, use local mechanical exhaust ventilation at sources or air contamination such as open process equipment.

**Eye Protection:** Although this product does not cause significant eye irritation or eye toxicity requiring special protection, good industrial practice should be used to avoid eye contact.

AIRBOURNE EXPOSURE LIMITS:

Product Type: Acrylic multipolymer emulsion

OSHA PEL: None established
ACGIH TLV: None established

## SECTION 9 SPECIAL PRECAUTIONS

**Precautions To Be Taken In Handling:** Avoid contact with skin or breathing concentrated vapors. Do not open containers in unventilated areas. Keep ignition sources away. Protect from freezing.

**Other Precautions:** Do not take internally. Do not get in eyes. Avoid prolonged or repeated contact with skin. Use under well ventilated conditions. For personal hygiene protection always wash thoroughly after handling product. Always wash up before eating, smoking, or using toilet facilities.

## SECTION 10 REGULATORY INFORMATION

TSCA (Toxic Substances Control Act): All ingredients are on the TSCA Chemical Substances Inventory.

SARA Hazard Notification:
Hazard Categories Under Title III Rules (40 CFR 370): Not Applicable

Section 313 Toxic Chemicals: Not Applicable

This product is not hazardous under applicable DOT, ICAO/IATA or IMDG regulations.

## DISCLAIMER OF LIABILITY

The information and recommendations provided herein are believed to be accurate at the time of preparation obtained from sources believed to be reliable. Concrete Sealants, Inc., makes no warranty, expressed or implied, concerning this document or the accuracy of the information contained herein.

The information and recommendations contained herein are not intended to relieve the reader of responsibility to investigate and understand the laws, procedures, and regulations applicable to the readers enterprise, not to relieve the reader of responsibility to comply with laws applicable to the readers enterprise and place of business and to verify independently the information provided in this document as it may relate to the reader's specific process or application.

# SAFETY DATA SHEET

## 1. Identification

| | |
|---|---|
| **Product identifier** | **Rapid Set Low-P Cement** |
| **Other means of identification** | |
| **Product code** | 201000050, 201002000, 201012000 |
| **Recommended use** | Industrial use. |
| **Recommended restrictions** | None known. |
| **Manufacturer/Importer/Supplier/Distributor information** | |
| **Company name** | CTS Cement Manufacturing Corporation |
| **Address** | 11065 Knott Ave Suite A<br>Cypress, CA 90630<br>United States |
| **Telephone** | 1-800-929-3030 |
| **E-mail** | info@ctscement.com |
| **Contact person** | Safety Officer |
| **Emergency telephone number** | 1-800-929-3030 (8 AM - 5 PM) |

## 2. Hazard(s) identification

| | | |
|---|---|---|
| **Physical hazards** | Not classified. | |
| **Health Hazards** | Skin corrosion/irritation | Category 2 |
| | Serious eye damage/eye irritation | Category 1 |
| | Carcinogenicity | Category 1A |
| | Specific Target Organ Toxicity, Single Exposure | Category 3 respiratory tract irritation |
| | Specific Target Organ Toxicity, Repeated Exposure | Category 2 (Lungs) |
| **OSHA defined hazards** | Not classified. | |

**Label elements**



| | |
|---|---|
| **Signal word** | Danger |
| **Hazard statement** | Causes skin irritation. Causes serious eye damage. |
| **Precautionary statement** | |
| **Prevention** | Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. |
| **Response** | If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. If on skin: Wash with plenty of water. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash before reuse. |
| **Storage** | Store in dry location. Store away from incompatible materials. |
| **Disposal** | Dispose of waste and residues in accordance with local authority requirements. |
| **Hazard(s) not otherwise classified (HNOC)** | None known. |

## 3. Composition/information on ingredients

**Mixtures**

| Chemical name | CAS number | % |
|---|---|---|
| Calcium Sulfoaluminate Cement | 960375-09-1 | 80-98 |
| Sodium Sulfate | 7757-82-6 | 0-2 |
| Methanal | 50-00-0 | 0-0.01 |
| Silica (Quartz) Crystalline | 14808-60-7 | <0.1 |

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

## 4. First-aid measures

**Inhalation** If dust from the material is inhaled, remove the affected person immediately to fresh air. Call a physician if symptoms develop or persist.

**Skin contact** Remove contaminated clothing. Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse.

**Eye contact** Do not rub eyes. Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.

**Ingestion** Immediately rinse mouth and drink plenty of water. Call an ambulance and take these instructions. Get medical attention if symptoms occur.

**Most important symptoms/effects, acute and delayed** Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Upper respiratory tract irritation. Coughing. Discomfort in the chest. Shortness of breath. Skin irritation.

**Indication of immediate medical attention and special treatment needed** Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

**General information** If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

## 5. Fire-fighting measures

**Suitable extinguishing media** Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).

**Unsuitable extinguishing media** Do not use water jet as an extinguisher, as this will spread the fire.

**Specific hazards arising from the chemical** During fire, gases hazardous to health may be formed.

**Special protective equipment and precautions for firefighters** Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

**Fire fighting equipment/instructions** Move containers from fire area if you can do so without risk.

**Specific methods** Use standard firefighting procedures and consider the hazards of other involved materials.

**General fire hazards** No unusual fire or explosion hazards noted.

## 6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures** Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not breathe dust. Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

**Methods and materials for containment and cleaning up** Stop the flow of material, if this is without risk. If sweeping of a contaminated area is necessary use a dust suppressant agent which does not react with the product. Collect dust using a vacuum cleaner. Minimize dust generation and accumulation. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water. For waste disposal, see section 13 of the SDS.

**Environmental precautions** Avoid discharge into drains, water courses or onto the ground.

## 7. Handling and storage

**Precautions for safe handling**
Provide appropriate exhaust ventilation at places where dust is formed. Minimize dust generation and accumulation. Avoid breathing dust. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

**Conditions for safe storage, including any incompatibilities**
Store in original tightly closed container. Store in dry location. Store away from incompatible materials (see Section 10 of the SDS).

## 8. Exposure controls/personal protection

**Occupational exposure limits**

**US. OSHA Table Z-3 (29 CFR 1910.1000)**

| Components | Type | Value | Form |
|---|---|---|---|
| Silica quartz (CAS 14808-60-7) | TWA | 0.3 mg/m3 | Total Dust. |
| | | 0.1 mg/m3 | Respirable. |
| | | 2.4 mppcf | Respirable |

**US. ACGIH Threshold Limit Values**

| Components | Type | Value | Form |
|---|---|---|---|
| Silica quartz (CAS 14808-60-7) | TWA | 0.025 mg/m3 | Respirable fraction. |

**US. NIOSH: Pocket Guide to Chemical Hazards**

| Components | Type | Value | Form |
|---|---|---|---|
| Silica quartz (CAS 14808-60-7) | TWA | 0.05 mg/m3 | Respirable dust. |

**Biological limit values**
No biological exposure limits noted for the ingredient(s).

**Appropriate engineering controls**
Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Ventilation should be sufficient to effectively remove and prevent buildup of any dusts or fumes that may be generated during handling or thermal processing. If engineering measures are not sufficient to maintain concentrations of dust particulates below the Occupational Exposure Limit (OEL), suitable respiratory protection must be worn. Eye wash facilities and emergency shower must be available when handling this product.

**Individual protection measures, such as personal protective equipment**

**Eye/face protection**
Wear safety glasses or safety goggles unless full face respirator is in use.

**Skin protection**

**Hand protection**
Wear appropriate chemical resistant gloves.

**Other**
Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

**Respiratory protection**
Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits.

**Thermal hazards**
Wear appropriate thermal protective clothing, when necessary.

**General hygiene considerations**
When using, do not eat, drink or smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

## 9. Physical and chemical properties

| | |
|---|---|
| **Appearance** | |
| **Physical state** | Solid. |
| **Form** | Powder. |
| **Color** | Tan. |
| **Odor** | Low. |
| **Odor threshold** | Not available. |
| **pH** | 11 – 12 when wet |
| **Melting point/freezing point** | Not applicable. |
| **Initial boiling point and boiling range** | Not applicable. |
| **Flash point** | Not applicable. |
| **Evaporation rate** | Not applicable. |
| **Flammability (solid, gas)** | Non combustible. |
| **Upper/lower flammability or explosive limits** | |
| **Flammability limit - lower (%)** | Not applicable. |
| **Flammability limit - upper (%)** | Not applicable. |
| **Vapor pressure** | Not applicable. |
| **Vapor density** | Not applicable. |
| **Relative density** | 2.98 @ 20°C |
| **Solubility(ies)** | |
| **Solubility (water)** | Not available. |
| **Partition coefficient (n-octanol/water)** | Not applicable. |
| **Auto-ignition temperature** | Not applicable. |
| **Decomposition temperature** | 2460 °F (1350 °C) |
| **Viscosity** | Not applicable. |
| **Other information** | |
| **Bulk density** | 60 lb/ft³ |
| **Partition coefficient (oil/water)** | Not applicable. |
| **VOC (Weight %)** | Not applicable. |

## 10. Stability and reactivity

| | |
|---|---|
| **Reactivity** | The product is stable and non-reactive under normal conditions of use, storage and transport. |
| **Chemical stability** | Material is stable under normal conditions. |
| **Possibility of hazardous reactions** | No dangerous reaction known under conditions of normal use. |
| **Conditions to avoid** | Avoid temperatures exceeding the decomposition temperature. Contact with incompatible materials. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). |
| **Incompatible materials** | Strong oxidizing agents. |
| **Hazardous decomposition products** | Sulfur oxides. |

## 11. Toxicological information

**Information on likely routes of exposure**

| | |
|---|---|
| **Inhalation** | Inhalation of dusts may cause respiratory irritation. Prolonged inhalation may be harmful. |
| **Skin contact** | Causes skin irritation. Prolonged contact with wet cement/mixture may cause burns. |
| **Eye contact** | Causes serious eye damage. Prolonged contact with wet cement/mixture may cause burns. |
| **Ingestion** | Swallowing may cause gastrointestinal irritation. |

**Symptoms related to the physical, chemical and toxicological characteristics** Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Upper respiratory tract irritation. Coughing. Discomfort in the chest. Shortness of breath. Skin irritation.

**Information on toxicological effects**

**Acute toxicity** May cause respiratory irritation.

**Skin corrosion/irritation** Causes skin irritation.

**Serious eye damage/eye irritation** Causes serious eye damage.

**Respiratory or skin sensitization**

**Respiratory sensitization** No data available.

**Skin sensitization** No data available.

**Germ cell mutagenicity** No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

**Carcinogenicity** May cause cancer.
In 1997, IARC (the International Agency for Research on Cancer) concluded that crystalline silica inhaled from occupational sources can cause lung cancer in humans. However in making the overall evaluation, IARC noted that "carcinogenicity was not detected in all industrial circumstances studied. Carcinogenicity may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity or distribution of its polymorphs." (IARC Monographs on the evaluation of the carcinogenic risks of chemicals to humans, Silica, silicates dust and organic fibres, 1997, Vol. 68, IARC, Lyon, France.) In June 2003, SCOEL (the EU Scientific Committee on Occupational Exposure Limits) concluded that the main effect in humans of the inhalation of respirable crystalline silica dust is silicosis. "There is sufficient information to conclude that the relative risk of lung cancer is increased in persons with silicosis (and, apparently, not in employees without silicosis exposed to silica dust in quarries and in the ceramic industry). Therefore, preventing the onset of silicosis will also reduce the cancer risk..." (SCOEL SUM Doc 94-final, June 2003) According to the current state of the art, worker protection against silicosis can be consistently assured by respecting the existing regulatory occupational exposure limits. Occupational exposure to respirable dust and respirable crystalline silica should be monitored and controlled.

**IARC Monographs. Overall Evaluation of Carcinogenicity**

| | |
|---|---|
| Silica, quartz (CAS 14808-60-7) | 1 Carcinogenic to humans. |

**NTP Report on Carcinogens**

| | |
|---|---|
| Silica, quartz (CAS 14808-60-7) | Known To Be Human Carcinogen |

**OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)**

Not listed.

**Reproductive toxicity** No data available.

**Specific target organ toxicity - single exposure** No data available.

**Specific target organ toxicity - repeated exposure** No data available.

**Aspiration hazard** Due to the physical form of the product it is not an aspiration hazard.

## 12. Ecological information

**Ecotoxicity** The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Persistence and degradability** No data is available on the degradability of this product.

**Bioaccumulative potential** No data available.

**Mobility in soil** No data available.

**Other adverse effects** No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

## 13. Disposal considerations

**Disposal instructions** Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.

**Local disposal regulations** Dispose in accordance with all applicable regulations.

**Hazardous waste code** The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

| | |
|---|---|
| **Waste from residues / unused products** | Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions). |
| **Contaminated packaging** | Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied. |

## 14. Transport information

**DOT**

Not regulated as dangerous goods.

**IATA**

Not regulated as dangerous goods.

**IMDG**

Not regulated as dangerous goods.

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** Not applicable.

## 15. Regulatory information

**US federal regulations** This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

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

Not regulated.

**OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)**

Not listed.

**CERCLA Hazardous Substance List (40 CFR 302.4)**

Not listed.

**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

**SARA 302 Extremely hazardous substance**

| Chemical name | CAS number | Reportable quantity | Threshold planning quantity | Threshold planning quantity, lower value | Threshold planning quantity, upper value |
|---|---|---|---|---|---|
| Methanal | 50-00-0 | 100 | 500 lbs | | |

**SARA 311/312 Hazardous chemical** Yes

**SARA 313 (TRI reporting)**

| Chemical name | CAS number | % by wt. |
|---|---|---|
| Methanal | 50-00-0 | <=0.02 |

**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**

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

**US. Massachusetts RTK - Substance List**

Silica, quartz (CAS 14808-60-7)

**US. New Jersey Worker and Community Right-to-Know Act**

Silica, quartz (CAS 14808-60-7)

**US. Pennsylvania Worker and Community Right-to-Know Law**

Methanal (CAS 50-00-0)

Silica, quartz (CAS 14808-60-7)

**US. Rhode Island RTK**

Not regulated.

**US. California Proposition 65**

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

**US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance**

Methanal (CAS 50-00-0)

Silica, quartz (CAS 14808-60-7)

**International Inventories**

| Country(s) or region | Inventory name | On inventory (yes/no)* |
|---|---|---|
| United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory | Yes |

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

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

| | |
|---|---|
| **Issue date** | 22-May-2015 |
| **Revision date** | - |
| **Version #** | 01 |
| **HMIS® ratings** | Health: 3<br>Flammability: 0<br>Physical hazard: 0 |

**Disclaimer**

CTS Cement Manufacturing Corporation cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.

QUIKRETE®
CEMENT & CONCRETE PRODUCTS™

# Dry-Packaged Fast-Setting Cement Based Products

## MATERIAL SAFETY DATA SHEET
**(Complies with OSHA 29 CFR 1910.1200)**

## SECTION I: PRODUCT IDENTIFICATION

The QUIKRETE® Companies
One Securities Centre
3490 Piedmont Road, Suite 1300
Atlanta, GA 30329

Emergency Telephone Number
(770) 216-9580

Information Telephone Number
(770) 216-9580




MSDS J2
Revision: Feb-10

| QUIKRETE® Product Name | Code # |
|---|---|
| Fast-Setting Concrete Mix | 1004-50 |
| Post Haste | 1004-65 |
| Concrete Resurfacer | 1131-40 |
| Multipurpose Concrete Resurfacer | 1131-45 |
| Bonded Topping Mix | 1133-04, 1018, 1017 |
| Commercial Grade FastSet™ Cement | 1124-92 |
| Commercial Grade FastSet™ Non-Shrink Grout | 1585-09 |
| Commercial Grade FastSet™ Repair Mortar | 1241-60 |
| Commercial Grade FastSet™ Concrete Mix | 1004-51 |
| Commercial Grade FastSet™ DOT Mix | 1244-56 |
| Commercial Grade FastSet™ DOT Mix – Extended | 1244-81 |
| Commercial Grade FastSet™ DOT Deck Repair – Polymer Modified | 1244-58 |
| Polymer Modified Structural Concrete – Extended Set | 1242-85 |

**Product Use:** Portland cement-based, rapid-setting materials for general construction or repair.

## SECTION II - HAZARD IDENTIFICATION

**Route(s) of Entry:** Inhalation, Skin, Ingestion
**Acute Exposure:** Product becomes alkaline when exposed to moisture. Exposure can dry the skin, cause alkali burns and affect the mucous membranes. Dust can irritate the eyes and upper respiratory system. Toxic effects noted in animals include, for acute exposures, alveolar damage with pulmonary edema.
**Chronic Exposure:** Dust can cause inflammation of the lining tissue of the interior of the nose and inflammation of the cornea. Hypersensitive individuals may develop an allergic dermatitis.
**Carcinogenicity:** Since Portland cement and blended cements are manufactured from raw materials mined from the earth (limestone, marl, sand, shale, etc.) and process heat is provided by burning fossil fuels, trace, but detectable, amounts of naturally occurring, and possibly harmful, elements may be found during chemical analysis. Under ASTM standards, Portland cement may contain 0.75 % insoluble residue. A fraction of these residues may be free crystalline silica. Respirable crystalline silica (quartz) can cause silicosis, a fibrosis (scarring) of the lungs and possibly cancer. There is evidence that exposure to respirable silica or the

disease silicosis is associated with an increased incidence of Scleroderma, tuberculosis and kidney disorders.

| | | |
|---|---|---|
| **Carcinogenicity Listings:** | NTP: | Known carcinogen |
| | OSHA: | Not listed as a carcinogen |
| | IARC Monographs: | Group 1 Carcinogen |
| | California Proposition 65: | Known carcinogen |

NTP: The National Toxicology Program, in its "Ninth Report on Carcinogens" (released May 15, 2000) concluded that "Respirable crystalline silica (RCS), primarily quartz dusts occurring in industrial and occupational settings, is *known to be a human carcinogen*, based on sufficient evidence of carcinogenicity from studies in humans indicating a causal relationship between exposure to RCS and increased lung cancer rates in workers exposed to crystalline silica dust (reviewed in IAC, 1997; Brown *et al*., 1997; Hind *et al*., 1997)

IARC: The International Agency for Research on Cancer ("IARC") concluded that there was "*sufficient evidence* in humans for the carcinogenicity of crystalline silica in the forms of quartz or cristobalite from occupational sources", and that there is "*sufficient evidence* in experimental animals for the carcinogenicity of quartz or cristobalite." The overall IARC evaluation was that "crystalline silica inhaled in the form of quartz or cristobalite from occupational sources is *carcinogenic to humans (*Group 1)." The IARC evaluation noted that "carcinogenicity was not detected in all industrial circumstances or studies. Carcinogenicity may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity or distribution of its polymorphs." For further information on the IARC evaluation, see IARC Monographs on the Evaluation of carcinogenic Risks to Humans, Volume 68, "Silica, Some Silicates." (1997)

**Signs and Symptoms of Exposure:** Symptoms of excessive exposure to the dust include shortness of breath and reduced pulmonary function. Excessive exposure to skin and eyes especially when mixed with water can cause caustic burns as severe as third degree.

**Medical Conditions Generally Aggravated by Exposure:** Individuals with sensitive skin and with pulmonary and/or respiratory disease, including, but not limited to, asthma and bronchitis, or subject to eye irritation, should be precluded from exposure. Exposure to crystalline silica or the disease silicosis is associated with increased incidence of scleroderma, Tuberculosis and possibly increased incidence of kidney lesions.

**Chronic Exposure:** Dust can cause inflammation of the lining tissue of the interior of the nose and inflammation of the cornea. Hypersensitive individuals may develop an allergic dermatitis. (May contain trace (<0.05 %) amounts of chromium salts or compounds including hexavalent chromium, or other metals found to be hazardous or toxic in some chemical forms. These metals are mostly present as trace substitutions within the principal minerals)

**Medical Conditions Generally Aggravated by Exposure:** Individuals with sensitive skin and with pulmonary and/or respiratory disease, including, but not limited to, asthma and bronchitis, or subject to eye irritation, should be precluded from exposure.

## SECTION III - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

| Hazardous Components | CAS No. | PEL (OSHA) $mg/M^3$ | TLV (ACGIH) $mg/M^3$ |
|---|---|---|---|
| Portland Cement | 65997-15-1 | 5 | 5 |
| Lime | 01305-62-0 | 5 | 5 |

| | | | |
|---|---|---|---|
| Silica Sand, crystalline | 14808-60-7 | $\frac{10}{\%SiO_2+2}$ | 0.05 (respirable) |

May contain one or more of the following ingredients:

| | | | |
|---|---|---|---|
| Amorphous Silica (From fly Ash) | 07631-86-9 | $\frac{80}{\%SiO_2+2}$ | 10 |
| Alumina (From Fly Ash) | 01344-28-1 | 5 | 5 |
| Limestone Dust | 01317-65-3 | 5 | 5 |
| Calcium Sulfate | 10101-41-4 or 13397-24-5 | 5 | 5 |
| Calcium Sulfoaluminate | 65997-16-2 | 15 | 10 |

**Other Limits:** National Institute for Occupational Safety and Health (NIOSH). Recommended standard maximum permissible concentration=0.05 mg/$M^3$ (respirable free silica) as determined by a full-shift sample up to 10-hour working day, 40-hour work week. See NIOSH Criteria for a Recommended Standard Occupational Exposure to Crystalline Silica.

## SECTION IV – First Aid Measures

**Eyes:** Immediately flush eye thoroughly with water. Continue flushing eye for at least 15 minutes, including under lids, to remove all particles. Call physician immediately.
**Skin:** Wash skin with cool water and pH-neutral soap or a mild detergent. Seek medical treatment if irritation or inflammation develops or persists. Seek immediate medical treatment in the event of burns.
**Inhalation:** Remove person to fresh air. If breathing is difficult, administer oxygen. If not breathing, give artificial respiration. Seek medical help if coughing and other symptoms do not subside. Inhalations of large amounts of Portland cement require immediate medical attention.
**Ingestion:** Do not induce vomiting. If conscious, have the victim drink plenty of water and call a physician immediately.

## SECTION V - FIRE AND EXPLOSION HAZARD DATA

**Flammability:** Noncombustible and not explosive.
**Auto-ignition Temperature:** Not Applicable
**Flash Points:** Not Applicable

## SECTION VI – ACCIDENTAL RELEASE MEASURES

If spilled, use dustless methods (vacuum) and place into covered container for disposal (if not contaminated or wet). Use adequate ventilation to keep exposure to airborne contaminants below the exposure limit.

## SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND STORAGE

Do not allow water to contact the product until time of use. DO NOT BREATHE DUST. In dusty environments, the use of an OSHA, MSHA or NIOSH approved respirator and tight fitting goggles is recommended.

## SECTION VIII – EXPOSURE CONTROL MEASURES

**Engineering Controls:** Local exhaust can be used, if necessary, to control airborne dust levels.

**Personal Protection:** The use of barrier creams or impervious gloves, boots and clothing to protect the skin from contact is recommended. Following work, workers should shower with soap and water. Precautions must be observed because burns occur with little warning -- little heat is sensed.

WARN EMPLOYEES AND/OR CUSTOMERS OF THE HAZARDS AND REQUIRED OSHA PRECAUTIONS ASSOCIATED WITH THE USE OF THIS PRODUCT.

**Exposure Limits:** Consult local authorities for acceptable exposure limits**.**

## SECTION IX - PHYSICAL/CHEMICAL CHARACTERISTICS

**Appearance:** Gray to gray-brown colored powder; Some products contain coarse aggregates.

| | | | |
|---|---|---|---|
| **Specific Gravity:** | 2.6 to 3.15 | **Melting Point:** | >2700$^{o}$F |
| **Boiling Point:** | >2700$^{o}$F | **Vapor Pressure:** | Not Available |
| **Vapor Density:** | Not Available | **Evaporation Rate:** | Not Available |
| **Solubility in Water:** | Slight | **Odor:** | Not Available |

## SECTION X - REACTIVITY DATA

**Stability:** Stable.
**Incompatibility (Materials to Avoid):** Contact of silica with powerful oxidizing agents such as fluorine, chlorine trifluoride, manganese trioxide, or oxygen difluoride may cause fires
**Hazardous Decomposition or By-products:** Silica will dissolve in Hydrofluoric Acid and produce a corrosive gas – silicon tetrafluoride.
**Hazardous Polymerization:** Will Not Occur.
**Condition to Avoid:** Keep dry until used to preserve product utility.

## SECTION XI – TOXICOLOGICAL INFORMATION

**Routes of Entry:** Inhalation, Ingestion
**Toxicity to Animals:**
LD50: Not Available
LC50: Not Available
**Chronic Effects on Humans:** Conditions aggravated by exposure include eye disease, skin disorders and Chronic Respiratory conditions.
**Special Remarks on Toxicity:** Not Available

## SECTION XII – ECOLOGICAL INFORMATION

**Ecotoxicity:** Not Available
**BOD5 and COD:** Not Available
**Products of Biodegradation:** Not available
**Toxicity of the Products of Biodegradation:** Not available
**Special Remarks on the Products of Biodegradation:** Not available

## SECTION XIII – DISPOSAL CONSIDERATIONS

**Waste Disposal Method:** The packaging and material may be land filled; however, material should be covered to minimize generation of airborne dust. This product is not classified as a hazardous waste under the authority of the RCRA (40CFR 261) or CERCLA (40CFR 117&302).

## SECTION XIV – TRANSPORT INFORMATION

Not hazardous under U.S. DOT and TDG regulations.

## SECTION XV – OTHER REGULATORY INFORMATION

**US OSHA 29CFR 1910.1200:** Considered hazardous under this regulation and should be included in the employers' hazard communication program
**SARA (Title III) Sections 311 & 312:** Qualifies as a hazardous substance with delayed health effects
**SARA (Title III) Section 313:** Not subject to reporting requirements
**TSCA (May 1997):** Some substances are on the TSCA inventory list
**Federal Hazardous Substances Act**: Is a hazardous substance subject to statues promulgated under the subject act
**Canadian Environmental Protection Act:** Not listed
**Canadian WHMIS Classification:** Considered to be a hazardous material under the Hazardous Products Act as defined by the Controlled Products Regulations (Class D2A, E- Corrosive Material) and subject to the requirements of Health Canada's Workplace Hazardous Material Information (WHMIS). This product has been classified according to the hazard criteria of the Controlled Products Regulation (CPR). This document complies with the WHMIS requirements of the Hazardous Products Act (HPA) and the CPR.

## SECTION XVI – OTHER INFORMATION

**HMIS-III:**

| | |
|---|---|
| Health – | 0 = No significant health risk |
| | 1 = Irritation or minor reversible injury possible |
| | 2 = Temporary or minor injury possible |
| | 3 = Major injury possible unless prompt action is taken |
| | 4 = Life threatening, major or permanent damage possible |
| Flammability- | 0 = Material will not burn |
| | 1 = Material must be preheated before ignition will occur |
| | 2 = Material must be exposed to high temperatures before ignition |
| | 3 = Material capable of ignition under normal temperatures |
| | 4 = Flammable gases or very volatile liquids; may ignite spontaneously |
| Physical Hazard- | 0 = Material is normally stable, even under fire conditions |
| | 1 = Material normally stable but may become unstable at high temps |
| | 2 = Materials that are unstable and may undergo react at room temp |
| | 3 = Materials that may form explosive mixtures with water |
| | 4 = Materials that are readily capable of explosive water reaction |

**Abbreviations:**

| | |
|---|---|
| **ACGIH** | American Conference of Government Industrial Hygienists |
| **CAS** | Chemical Abstract Service |
| **CERCLA** | Comprehensive Environmental Response, Compensation and Liability Act |
| **CFR** | Code of Federal Regulations |

| | |
|---|---|
| **CPR** | Controlled Products Regulations (Canada) |
| **DOT** | Department of Transportation |
| **IARC** | International Agency for Research |
| **MSHA** | Mine Safety and Health Administration |
| **NIOSH** | National Institute for Occupational Safety and Health |
| **NTP** | National Toxicity Program |
| **OSHA** | Occupational Safety and Health Administration |
| **PEL** | Permissible Exposure Limit |
| **RCRA** | Resource Conservation and Recovery Act |
| **SARA** | Superfund Amendments and Reauthorization Act |
| **TLV** | Threshold Limit Value |
| **TWA** | Time-weighted Average |
| **WHMIS** | Workplace Hazardous Material Information System |

**Revision #07-01, supersedes all previous revisions**
**Created: 10/25/2006**
**Last Updated: February 23, 2010**

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**NOTE:** The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, express or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by exposure to silica contained in our products.

CEMENT & CONCRETE PRODUCTS™

# D1: Packaged Raw Materials

**SAFETY DATA SHEET**
**(Complies with OSHA 29 CFR 1910.1200)**

## SECTION I: PRODUCT IDENTIFICATION

The QUIKRETE® Companies
One Securities Centre
3490 Piedmont Road, Suite 1300
Atlanta, GA 30305

Emergency Telephone Number
(770) 216-9580
Information Telephone Number
(770) 216-9580

SDS D1
Revision: Jun-15

| QUIKRETE® Product Name | Code # |
|---|---|
| QUIKRETE® PORTLAND CEMENT | 1124/1231 |
| PORTLAND/POZZOLAN CEMENT | 1118-35 |
| QUIKRETE® PORTLAND T-I AND T-III CEMENT | 2126-53 |
| QUIKRETE® PORTLAND T-10 AND T-30 CEMENT | 2126-54 |
| QUIKRETE® PORTLAND T-III W FLY ASH | 1125-22 |
| ALL-STAR PORTLAND CEMENT TYPE-I | 1121-94 |
| ZIA PORTLAND CEMENT | 2124-97 |
| CONCRETE ACCELERATOR | 9800 |

**PRODUCT USE**: HYDRAULIC CEMENTS FOR GENERAL CONSTRUCTION AND REPAIR

## SECTION II - HAZARD IDENTIFICATION

**Hazard-determining components of labeling:** Silica, Portland cement

**2.1 Classification of the substance or mixture**
Carcinogen – Category 1A
Skin Corrosion – Category 1B
Skin Sensitization – Category 1B
Specific Target Organ Toxicity Repeat Exposure – Category 1
Specific Target Organ Toxicity: Single Exposure – Category 3

**2.2a Signal word** DANGER!

**2.2b Hazard Statements**
May cause cancer through chronic inhalation
Causes severe skin burns and serious eye damage
May cause an allergic skin reaction

Causes damage to lungs through prolonged or repeated inhalation
May cause respiratory irritation

**2.2c Pictograms**



**2.2d Precautionary statements**
Do not handle until all safety precautions have been read and understood.
Wear impervious gloves, such as nitrile. Wear eye protection, and protective clothing.
Do not eat, drink or smoke when using this product.
Wash thoroughly after handling.
Use only in a well-ventilated area.
Do not breathe dust.

If swallowed: Rinse mouth. Do NOT induce vomiting.
If inhaled: Remove person to fresh air and keep comfortable for breathing.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If on skin (or hair): Remove immediately all contaminated clothing and wash before re-use. Rinse skin or hair with water.
If significant skin irritation or rash occurs: get medical advice or attention.

**Immediately seek medical advice or attention if symptoms are significant or persist.**

Store in a well-ventilated place. Keep container tightly closed.
Dispose of contents/containers in accordance with all regulations.

**2.3 Additional Information** Precautions must be observed because burns occur with little warning -- little heat is sensed.

**2.3a HNOC – Hazards not otherwise classified:** Not applicable

**2.3b Unknown Acute Toxicity**: None
**2.3C WHMIS Classification**
Class D2B – Skin/Eye Irritant
Class D2A – Chronic Toxic Effects – Carcinogen
Class E – Corrosive Material

2.3d Label Elements According To WHMIS

**Hazard Symbols**



**Signal Word**
DANGER!

## SECTION III - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

| Hazardous Components | CAS No. | % by Weight |
|---|---|---|
| Portland Cement | 65997 15 1 | 99-100 |
| Sand, Silica, Quartz | 14808-60-7 | <1 |

*The concentrations ranges are provided due to batch-to-batch variability.
None of the constituents of this material are of unknown toxicity.

## SECTION IV – FIRST AID MEASURES

**4.1 Description of the first-aid measures**
**General information:**
**After inhalation:** Remove person to fresh air. If breathing is difficult, administer oxygen. If not breathing, give artificial respiration. In case of unconsciousness, place patient stably in side position for transportation.
**After skin contact:** Wash skin with cool water and pH-neutral soap or a mild detergent. If significant skin irritation or rash occurs: get medical advice or attention.
**After eye contact:** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
**After swallowing:** Do not induce vomiting. If conscious, have the victim drink plenty of water and call a physician immediately. Never give anything by mouth to an unconscious person.

**4.2 Most important symptoms/effects, acute and delayed**
**Inhalation:** May cause respiratory tract irritation. Causes damage to organs through prolonged or repeated inhalation. This product contains crystalline silica. Prolonged or repeated inhalation of respirable silica from this product can cause silicosis.

**Skin contact:** Causes skin irritation. Handling can cause dry skin, discomfort, irritation, and dermatitis. May cause sensitization by skin contact. Product becomes extremely alkaline when exposed to moisture, and can cause alkali burns and affect the mucous membranes. Precautions must be observed because burns occur with little warning -- little heat is sensed.

**Eye Contact:** Causes serious eye damage. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva.

**Ingestion:** May be harmful if swallowed. Ingestion may cause discomfort and/or distress, nausea or vomiting.

**4.3 Indication of immediate medical attention and special treatment needed**:
Immediately seek medical advice or attention if symptoms are significant or persist.

## SECTION V - FIRE FIGHTING MEASURES

**5.1 Flammability of the Product:** Non-flammable and non-combustible
**5.2 Suitable extinguishing agents:** Treat for surrounding material
**5.3 Special hazards arising from the substance or mixture:** None
**5.3a Products of Combustion:** None
**5.3b Explosion Hazards in Presence of Various Substances:** Non-explosive in presence of shocks

## SECTION VI – ACCIDENTAL RELEASE MEASURES

**6.1 Personal precautions, protective equipment and emergency procedures:** Wear personal protective equipment (See section VIII). Keep unprotected persons away.

**6.2 Methods and material for containment and cleaning up:**
Do not allow to enter sewers/ surface or ground water. Dispose of unwanted materials and containers properly in accordance with all regulations.

## SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND STORAGE

**7.1 Handling**
**Precautions for safe handling:** Ensure good ventilation/exhaustion at the workplace. DO NOT BREATHE DUST. In dusty environments, the use of an OSHA, MSHA or NIOSH approved respirator and tight fitting goggles is recommended. Wear appropriate PPE (See section 8).Do not mix with other chemical products, except as indicated by the manufacturer. Do not get in eyes, on skin or clothing. Good housekeeping is important to prevent accumulation of dust.

**7.2 Storage**
**Requirements to be met by storerooms and receptacles:** No special requirements.
**Information about storage in one common storage facility:** Not required.

**Further information about storage conditions:** Keep out of the reach of children. Keep container tightly closed and prevent exposure to humidity. Do not allow water to contact the product until time of use to preserve product utility.

## SECTION VIII – EXPOSURE CONTROL MEASURES / PERSONAL PROTECTION

**8.1 Components with limit values that require monitoring at the workplace:**

| Hazardous Components | CAS No. | PEL (OSHA) mg/M$^3$ | TLV (ACGIH) mg/M$^3$ |
|---|---|---|---|
| Silica Sand, crystalline | 14808-60-7 | 0.1 | 0.025 (resp) |
| Portland Cement | 65997-15-1 | 5 (resp) 15 (total) | 10 (resp) |

**8.2 Exposure Controls**
Use ventilation adequate to keep exposures below recommended exposure limits.

**8.3 General protective and hygienic measures**
Keep away from foodstuffs, beverages and feed. Immediately remove all soiled and contaminated clothing. Wash hands before breaks and at the end of work. Avoid contact with the eyes and skin.

**8.3a Personal protective equipment**

**Protection of hands**:
Wear gloves of adequate length to offer appropriate skin protection from splashes. Nitrile, Butyl and PVC gloves have been found to offer adequate protection for incidental contact. Precautions must be observed because burns occur with little warning -- little heat is sensed.

**Eye protection:**
Wear approved eye protection (properly fitted dust- or splash-proof chemical safety glasses.

**Respiratory protection:**
A NIOSH-approved dust mask or filtering face piece is recommended in poorly ventilated areas or when permissible exposure limits may be exceeded. Respirators should be selected by and used under the direction of a trained health and safety professional, following requirements found in OSHA's respirator standard (29 CFR 1910.134) and ANSI's standard for respiratory protection (Z88.2).

## SECTION IX - PHYSICAL/CHEMICAL CHARACTERISTICS

**General Information**

| | |
|---|---|
| **Appearance** | Form: Granular Solid<br>Color: Gray to gray-brown colored<br>Odor: None |
| **pH-value at 20°C (68 °F):** | 13 (10%) |
| **Boiling point/Boiling range:** | Not applicable |

| | |
|---|---|
| **Flash point:** | Not applicable |
| **Auto igniting:** | Product is not self-igniting |
| **Vapor pressure at 21°C (70°F)** | Not available |
| **Density at 25°C (77 °F):** | 3.15 |
| **Solubility in / Miscibility with Water:** | Insoluble |
| **VOC content:** | 0 g/L VOC |

## SECTION X – STABILITY AND REACTIVITY

**10.1 Reactivity**
No dangerous reaction known under conditions of normal use.
**10.2 Chemical stability**
Stable under normal storage conditions. Keep in dry storage.
**10.3 Possibility of hazardous reaction**
No dangerous reaction known under conditions of normal use.
**10.4 Thermal decomposition / conditions to be avoided**
No decomposition if used according to specifications.
**10.5 Incompatible materials**
Contact of silica with powerful oxidizing agents such as fluorine, chlorine trifluoride, manganese trioxide, or oxygen difluoride may cause fires
**10.6 Hazardous Decomposition or By-products**
Silica will dissolve in Hydrofluoric Acid and produce a corrosive gas – silicon tetrafluoride.

## SECTION XI – TOXICOLOGICAL INFORMATION

**11.1 Exposure Routes:** Skin contact, skin adsorption, eye contact, inhalation, or ingestion.

**11.2 Symptoms related to physical/chemical/toxicological characteristics:**

**Inhalation:** May cause respiratory tract irritation. Causes damage to organs through prolonged or repeated exposure. This product contains crystalline silica. Prolonged or repeated inhalation of respirable silica from this product can cause silicosis.

**Skin contact:** Causes skin irritation. Handling can cause dry skin, discomfort, irritation, and dermatitis. May cause sensitization by skin contact. Product becomes extremely alkaline when exposed to moisture, and can cause alkali burns and affect the mucous membranes.

**Eye Contact:** Causes serious eye damage. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva.

**Ingestion:** Harmful if swallowed. Ingestion may cause discomfort and/or distress, nausea or vomiting.

### 11.3 Delayed, immediate and chronic effects of short-term and long-term exposure

**Short Term**

Skin Corrosion/Irritation: Causes severe skin burns.
Serious Eye Damage/Irritation: Causes severe eye damage.
Respiratory Sensitization: Not available
Skin Sensitization: May cause an allergic skin reaction.
Specific Target Organ Toxicity-Single Exposure: (Category 3) May cause respiratory irritation.
Aspiration Hazard: Not available

**Long Term**

Carcinogenicity: May cause cancer through chronic inhalation.
Germ Cell Mutagenicity: Not available
Reproductive Toxicity: Not available
Specific Target Organ Toxicity- Repeated Exposure: (Category 1) Causes damage to lungs through prolonged/repeated exposure
Synergistic/Antagonistic Effects: Not available.

## SECTION XII – ECOLOGICAL INFORMATION

### 12.1 Ecotoxicity

May cause long-term adverse effects to the aquatic environment. Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system. Must not reach bodies of water or drainage ditch undiluted or un-neutralized

### 12.2 Persistence and degradability

No further relevant information available.

### 12.3 Bioaccumulative potential:

No further relevant information available.

### 12.4 Mobility in soil

No further relevant information available.

### 12.5 Other Adverse Effects

No further relevant information available.

## SECTION XIII – DISPOSAL CONSIDERATIONS

### 13.1 Waste Disposal Method

The packaging and material may be land filled; however, material should be covered to minimize generation of airborne dust. This product is not classified as a hazardous waste under the authority of the RCRA (40CFR 261) or CERCLA (40CFR 117&302). Disposal must be made in accordance with local, state and federal regulations.

**13.2 Other disposal considerations**
**Uncleaned packaging**
**Recommendation:** Disposal must be made in accordance with local, state and federal regulations.
**Recommended cleansing agent:** Water, if necessary with cleansing agents.

## SECTION XIV – TRANSPORT INFORMATION

| | DOT (U.S.) | TDG (Canada) |
|---|---|---|
| **UN-Number** | Not Regulated | Not Regulated |
| **UN proper shipping name** | Not Regulated | Not Regulated |
| **Transport Hazard Class(es)** | Not Regulated | Not Regulated |
| **Packing Group (if applicable)** | Not Regulated | Not Regulated |

**14.1 Environmental hazards:**
Not Available

**14.2 Transport in bulk according to Annex II of Marpol 73/78 and the IBC Code**
Not available

**14.3 Special precautions for user**
Do not handle until all safety precautions have been read and understood.

## SECTION XV – OTHER REGULATORY INFORMATION

**15.1 Safety, Health and Environmental Regulations/Legislations specific for the chemical**

**Canada**
**WHMIS Classification:** Considered to be a hazardous material under the Hazardous Products Act as defined by the Controlled Products Regulations and subject to the requirements of Health Canada's Workplace Hazardous Material Information (WHMIS). This document complies with the WHMIS requirements of the Hazardous Products Act (HPA) and the CPR.

**15.2 US Federal Information**

**SARA 302/311/312/313 Components**

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302, 311, 312 or 313.
**RCRA:** Crystalline silica (quartz) is not classified as a hazardous waste under the Resource Conservation and Recovery Act, or its regulations, 40 CFR §261 et seq.
**CERCLA:** Crystalline silica (quartz) is not classified as a hazardous substance under regulations of the Comprehensive Environmental Response Compensation and Liability Act (CERCLA), 40 CFR §302.
**Emergency Planning and Community Right to Know Act (SARA Title III):** Crystalline silica (quartz) is not an extremely hazardous substance under Section 302 and is not a toxic chemical subject to the requirements of Section 313.
**FDA:** Silica is included in the list of substances that may be included in coatings used in food contact surfaces, 21 CFR §175.300(b)(3)(xxvi).
**NTP:** Respirable crystalline silica, primarily quartz dusts occurring in industrial and occupational settings, is classified as Known to be a Human Carcinogen.
**OSHA Carcinogen:** Crystalline silica (quartz) is not listed.

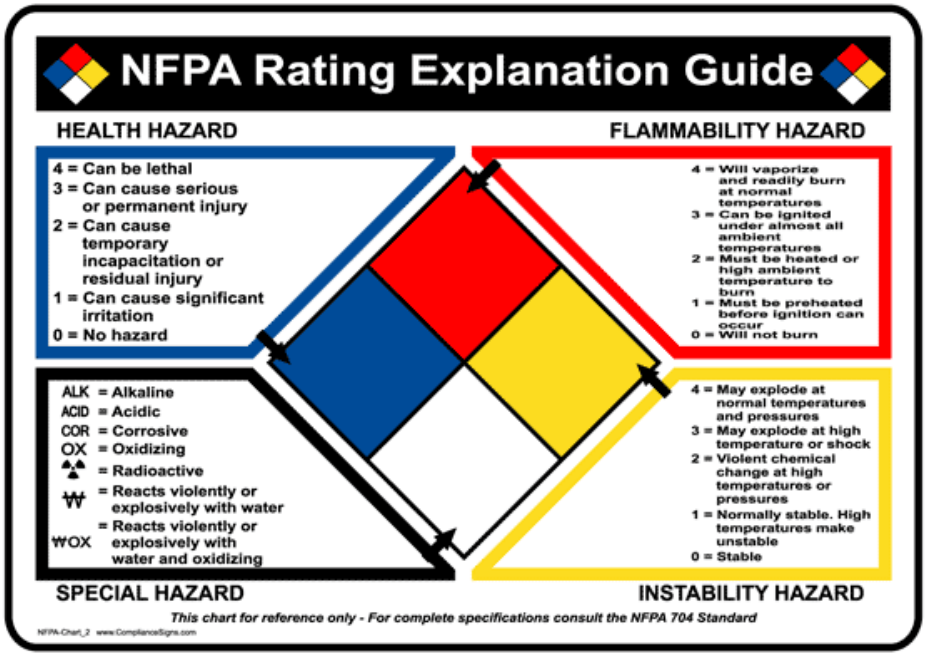
### 15.3 State Right to Know Laws

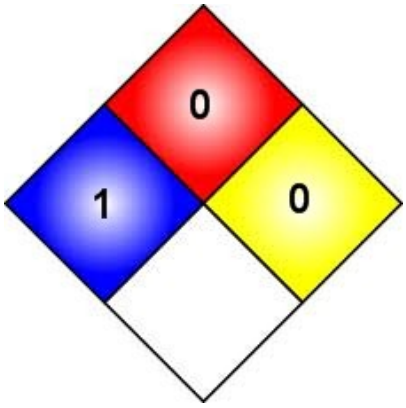
**California Prop. 65 Components**
**WARNING:** This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.
**California Inhalation Reference Exposure Level (REL):** California established a chronic REL of 3 µg for silica (crystalline, respirable). A chronic REL is an airborne level of a substance at or below which no adverse health effects are anticipated in individuals indefinitely exposed to the substance at that level.
**Massachusetts Toxic Use Reduction Act:** Silica, crystalline (respirable size, <10 microns) is “toxic” for purposes of the Massachusetts Toxic Use Reduction Act.

### 15.4 Global Inventories

**DSL** All components of this product are on the Canadian DSL list.
**TSCA No.:** Crystalline silica (quartz) appears on the EPA TSCA inventory under the CAS No. 14808-60-7. All constituents are listed in the TSCA inventory.

### 15.5 NFPA Ratings




## SECTION XVI – OTHER INFORMATION

**Last Updated: June 11, 2015**

**NOTE:** The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, express or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by exposure to silica contained in our products.

Prepared by

The QUIKRETE® Companies
Phone (800) 282-5828
www.QUIKRETE.com

**End of SDS**

## 1. Identification

### 1.1. Product identifier

Trade name: Protectosil® Degadeck® CSS

### 1.2. Recommended use of the chemical and restrictions on use

Relevant applications identified: For industrial use

### 1.3. Details of the supplier of the safety data sheet

Company:
Evonik Corporation USA
299 Jefferson Road
Parsippany,NJ 07054-0677
USA

Telephone: 973-929-8000

Telefax: 973-929-8040

Email address: Product-Regulatory-Services@Evonik.com

### 1.4. 24 HOUR EMERGENCY TELEPHONE NUMBERS:

**CHEMTREC - US & CANADA:** 800-424-9300

**CHEMTREC MEXICO:** 01-800-681-9531

**CHEMTREC INTERNATIONAL:** +1 703-527-3887 **(collect calls accepted)**

Product Regulatory Services : 973-929-8060

## 2. Hazards identification

### 2.1. Classification of the substance or mixture

Globally Harmonized System of Classification and Labelling of Chemicals (GHS)

| | | |
|---|---|---|
| Flammable liquids | Category 2 | H225 |
| Skin irritation | Category 2 | H315 |
| Skin Sensitisation | Category 1 | H317 |
| Specific target organ toxicity - single exposure (Respiratory system, Central nervous system) | Category 3 | H335, H336 |
| Carcinogenicity | Category 1B | H350 |

### 2.2. Label elements

Statutory basis: Globally Harmonized System of Classification and Labelling of Chemicals (GHS)

**hazard-defining component(s) (GHS)**

- Methyl methacrylate

Symbol(s)



Signal word: Danger

Hazard statement:
H225 - Highly flammable liquid and vapour.
H315 - Causes skin irritation.
H317 - May cause an allergic skin reaction.
H335 - May cause respiratory irritation.
H350 - May cause cancer.

Precautionary statement: Prevention:
P201 + P202 - Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.
P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P233 - Keep container tightly closed.
P240 - Ground/bond container and receiving equipment.
P241 - Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242 - Use only non-sparking tools.
P243 - Take precautionary measures against static discharge.
P261 - Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P264 - Wash skin thoroughly after handling.
P271 - Use only outdoors or in a well-ventilated area.
P272 - Contaminated work clothing should not be allowed out of the workplace.
P280 - Wear protective gloves/ eye protection/ face protection.

Precautionary statement: Reaction:
P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P308 + P311 - IF exposed or concerned: Call a POISON CENTER/doctor.
P321 - Specific treatment (see supplemental instructions on the administration of antidotes on this label).
P333 + P313 - If skin irritation or rash occurs: Get medical advice/ attention.
P362 + P364 - Take off contaminated clothing and wash it before reuse.
P370 + P378 - In case of fire: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide to extinguish.

Precautionary statement: Storage:
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed.
P235 - Keep cool.
P405 - Store locked up.

Precautionary statement: Disposal:
P501 - Dispose of contents/ container to an approved waste disposal plant.

Supplemental hazard information / Label elements

### 2.3. Other hazards
None known.

## 3. Composition/information on ingredients

| • **Methyl methacrylate** | 60% - 100% |
|---|---|
| CAS-No. 80-62-6 | |
| Flammable liquids | Category 2 |
| Skin irritation | Category 2 |

| | |
|---|---|
| Skin Sensitisation | Category 1 |
| Specific target organ toxicity - single exposure (Respiratory system, Central nervous system) | Category 3 |

**• tetramethylene dimethacrylate** 1.0% - 5.0%

CAS-No. 2082-81-7

| | |
|---|---|
| Skin Sens. 1B | |

**• N,N-dimethyl-p-toluidine** > 0.1% - < 1.0%

CAS-No. 99-97-8

| | |
|---|---|
| Flammable liquids | Category 4 |
| Carcinogenicity | Category 1B |
| Acute toxicity (Oral) | Category 3 |
| Acute toxicity (dermal) | Category 3 |
| Acute toxicity (Inhalation) | Category 3 |
| Specific Target Organ Toxicity - Repeated exposure | |

## 4. First aid measures

### 4.1. Description of first aid measures

**Inhalation**
If inhaled, remove to fresh air. If breathing is difficult, give oxygen. If unconscious, evaluate the need for artificial respiration. Get immediate medical attention.

**Skin contact**
Immediately wash skin with soap and plenty of water. Remove contaminated clothing. Obtain medical attention immediately if symptoms occur. Wash clothing before reuse.

**Eye contact**
Flush eyes with water at least 15 minutes. Get medical attention if eye irritation develops or persists.

**Ingestion**
If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.

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

**Symptoms**
None known

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

None known.

## 5. Fire-fighting measures

### 5.1. Extinguishing media

Suitable extinguishing media: foam, dry powder, CO2
Unsuitable extinguishing media: water

### 5.2. Special hazards arising from the substance or mixture

Flammable liquid. Vapors can travel to a source of ignition and flash back. Explosive mixtures may occur at temperatures at or above the flashpoint.
May be released in case of fire: carbon monoxide, carbon dioxide, organic products of decomposition.

### 5.3. Advice for firefighters

Containers can build up pressure if exposed to heat (fire). Cool with water spray.
As in any fire, wear self-contained positive-pressure breathing apparatus, (MSHA/NIOSH approved or equivalent) and full protective gear.

## 6. Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation. Wear suitable protective clothing. Keep away from sources of ignition - No smoking. Use respiratory apparatus where there are vapour/gas effects.

### 6.2. Environmental precautions

Obey relevant local, state, provincial and federal laws and regulations. Do not contaminate any lakes, streams, ponds, groundwater or soil.

### 6.3. Methods and material for containment and cleaning up

Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

**Additional advice**

Remove sources of ignition and ventilate area.
Run off may create fire or explosion hazard in sewer.
Assure sufficient ventilation.

## 7. Handling and storage

### 7.1. Precautions for safe handling

Ensure adequate ventilation. Wear personal protective equipment; see section 8. Vapors may spread long distances and travel to areas away from the work site before igniting or flashing back to the vapor source. Keep away from heat, sparks, flames and other sources of ignition. Keep container tightly closed. Use only with adequate ventilation.

### 7.2. Conditions for safe storage, including any incompatibilities

**Advice on protection against fire and explosion**

In the case of fire, cool the containers that are at risk with water or dilute with water (flooding).
Use only explosion-proof equipment.
This material may have a low electrical conductivity and therefore may accumulate dangerous levels of static electricity. An ignitable vapor-air mixture can form inside storage tanks.

The user must be sure to dissipate static charge by careful bonding and grounding of all equipment and personnel involved in fluid transfer with continuity checks to prove effectiveness. Additional precautions against fire and explosion are the use of inert gas to purge vapor space; dip-pipes while filling vessels, especially lined vessels; grounded tank level floats; reduced flow velocity; self-closing valves on transfer lines and flame arrestors in vent lines.

Follow all SDS/label precautions even after container is emptied because it may retain product residues.

**Storage**

Keep tightly closed in a dry, cool and well-ventilated place.

## 8. Exposure controls/personal protection

### 8.1. Control parameters

| • **Methyl methacrylate** | | |
|---|---|---|
| CAS-No.<br>Control parameters | 80-62-6<br>50 ppm | Time Weighted Average (TWA):(ACGIH) |
| Control parameters | 100 ppm | Short Term Exposure Limit (STEL):(ACGIH) |
| Control parameters | 100 ppm<br>410 mg/m3 | Permissible exposure limit:(OSHA Z1) |

| | | |
|---|---|---|
| Control parameters | 100 ppm<br>410 mg/m3 | Short Term Exposure Limit (STEL):(US CA OEL) |
| Control parameters | 50 ppm<br>205 mg/m3 | Time Weighted Average (TWA) Permissible Exposure Limit (PEL):(US CA OEL) |

### 8.2. Exposure controls

**Engineering measures**

Use this product preferably in a closed system, or use process enclosures, local exhaust ventilation or other engineering controls to minimize airborne exposure.

**Personal protective equipment**

**Respiratory protection**

A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 or applicable federal/provincial requirements must be followed whenever workplace conditions warrant respirator use. NIOSH's "Respirator Decision Logic" may be useful in determining the suitability of various types of respirators.

**Hand protection**

Wear protective gloves made of the following materials:.
Glove material butyl-rubber
The above mentioned hand protection is based on knowledge of the chemistry and anticipated uses of this product but it may not be appropriate for all workplaces. A hazard assessment should be conducted prior to use to ensure suitability of gloves for specific work environments and processes prior to use.

**Eye protection**

Safety glasses

**Skin and body protection**

A safety shower and eye wash fountain should be readily available.
To identify additional Personal Protective Equipment (PPE) requirements, it is recommended that a hazard assessment in accordance with the OSHA PPE Standard (29CFR1910.132) be conducted before using this product.

**Hygiene measures**

Keep working clothes separately.
Take off contaminated clothing and shoes immediately.
Observe the rules usually applicable when handling chemicals.
Cleanse and apply cream to skin after work.

## 9. Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

| | |
|---|---|
| physical state | liquid |
| Colour | bluish |
| Form | low-viscosity liquid |
| Odour | ester-like, sweet |
| Odour Threshold | < 1 ppm |
| pH | not applicable |
| Melting point/range | -48 °C (1.013 hPa)<br>Related to substance: methyl methacrylate |
| Boiling point/range | ca. 100 °C (1.013 hPa)<br>Method: DIN 51 751 |

| | | |
|---|---|---|
| | Related to substance: | methyl methacrylate |
| Flash point | 10 °C | |
| | Method: | DIN 51 755 |
| | Related to substance: | methyl methacrylate |
| Evaporation rate | > 1 | |
| Flammability (solid, gas) | no data available | |
| Lower explosion limit | 2.1 %(V) | (10.5 °C) |
| | Related to substance: | methyl methacrylate |
| Upper explosion limit | 12.5 %(V) | |
| | Related to substance: | methyl methacrylate |
| Vapour pressure | ca. 40 hPa | (20 °C) |
| Density | 0.97 g/cm3 | (20 °C) |
| | Method: | DIN 53217 |
| Water solubility | 16 g/l | (20 °C) |
| Partition coefficient: n-octanol/water | no data available | |
| Autoignition temperature | 430 °C | |
| | Method: | DIN 51 794 |
| | Related to substance: | methyl methacrylate |
| Thermal decomposition | not determined | |
| Viscosity, dynamic | 5 - 7 mPa.s | (23 °C) |
| | Method: | Brookfield method |
| Viscosity, kinematic | no data available | |

### 9.2. Other information

Explosiveness: no data available

## 10. Stability and reactivity

### 10.1. Reactivity

No dangerous reaction known under conditions of normal use.

### 10.2. Chemical stability

Stable under recommended storage conditions.

### 10.3. Possibility of hazardous reactions

Possibility of hazardous reactions: Hazardous polymerization may occur when exposed to excessive heating or contaminated with incompatible materials.

### 10.4. Conditions to avoid

Keep away from heat and sources of ignition.

**10.5. Incompatible materials**
Peroxides, amines, sulfur compounds. heavy metal ions. alkalis, reducing agents and oxidizing agents.

**10.6. Hazardous decomposition products**
None known.

This product is stable under normal storage conditions.

## 11. Toxicological information

### 11.1. Information on toxicological effects

| | |
|---|---|
| Acute oral toxicity | LD50 Rat: > 5000 mg/kg<br>Related to substance: methyl methacrylate |
| Acute inhalation toxicity | LC50 rat: 29.8 mg/l / 4 h<br>Related to substance: methyl methacrylate |
| Acute dermal toxicity | LD50 Rabbit: > 5000 mg/kg<br>Related to substance: methyl methacrylate |
| Skin irritation | Rabbit<br>irritating<br>Related to substance: methyl methacrylate |
| Eye irritation | Rabbit<br>irritating<br>Related to substance: methyl methacrylate |
| Sensitization | Guinea pig: positive and negative<br>Related to substance: methyl methacrylate |
| Repeated dose toxicity | Inhalation Rat<br>NOAEL: 25 mg/kg<br>Related to substance: methyl methacrylate<br>Oral Rat<br>NOAEL: 2000 mg/kg<br>Related to substance: methyl methacrylate |
| Mutagenicity assessment | not mutagenic |
| Carcinogenicity | No carcinogenic effect<br>Related to substance: methyl methacrylate |
| reproduction toxicity assessment | May cause harm to the unborn child. (Repr. Cat. 2)<br>Related to substance: methyl methacrylate |
| Further information | No results of animal experiments with the product available. |

**Toxicological information on components**
**Methyl methacrylate**

| | |
|---|---|
| Acute oral toxicity | LD50 Rat: > 5000 mg/kg<br>Method: OECD Test Guideline 401 |

| | |
|---|---|
| Acute inhalation toxicity | LC50 Rat: 29.8 mg/l / 4 h / vapour |
| Acute dermal toxicity | LD50 Rabbit: > 5000 mg/kg |
| Skin irritation | Irritating to skin. |
| Sensitization | Local Lymphnode Assay Mouse: May cause sensitisation by skin contact.<br>Method: OECD Test Guideline 429 |
| Repeated dose toxicity | Inhalation Rat / 2 years<br>NOAEL: 25 ppm<br>Damage to mucous membranes in the nose at 400 ppm<br><br>Ingestion Rat / 2 years<br>NOAEL: 2000 ppm<br>No significant adverse effects reported. |
| Assessment of STOT single exposure | Assessment: The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation. |

**N,N-dimethyl-p-toluidine**

| | |
|---|---|
| Acute oral toxicity | LD50 Rat: 996 mg/kg<br>Own study |
| Acute inhalation toxicity | LC50 Rat: 1.4 mg/l / 4 h |
| Repeated dose toxicity | Oral Rat<br>LOAEL: 6 mg/kg |
| Assessment of STOT repeat exposure | Assessment: The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 2. |

**CMR assessment**

| | |
|---|---|
| Carcinogenicity | Sufficient evidence of carcinogenicity in animal experiments |

**tetramethylene dimethacrylate**

| | |
|---|---|
| Sensitization | In sensitization tests on guinea pigs positive and negative results were found. |

## 12. Ecological information

### 12.1. Toxicity

*No ecotoxicological studies are available on the mixture.*

| | |
|---|---|
| Toxicity to fish | LC50 Rainbow trout: > 79 mg/l / 96 h<br>Related to substance: methyl methacrylate<br><br>EC50 Danio rerio: 9.4 mg/l / 48 h<br>Related to substance: methyl methacrylate |
| Toxicity in aquatic | EC50 Daphnia magna (Water flea): 69 mg/l / 48 h |

| | | |
|---|---|---|
| invertebrates | Related to substance: | methyl methacrylate |
| | NOEC Daphnia magna (Water flea): 37 mg/l / 504 h<br>Related to substance: | methyl methacrylate |
| Toxicity to algae | EC50 Pseudokirchneriella subcapitata (green algae): > 110 mg/l / 72 h<br>Related to substance: | methyl methacrylate |
| Toxicity to bacteria | Pseudomonas putida: 100 mg/l / 16 h<br>Related to substance: | methyl methacrylate |

### 12.2. Persistence and degradability

| | | |
|---|---|---|
| Biodegradability | Result: 94 % readily biodegradable<br>Related to substance: | methyl methacrylate |

### 12.3. Bioaccumulative potential

| | |
|---|---|
| Bioaccumulation | no data available |

### 12.4. Mobility in soil

| | |
|---|---|
| Mobility | no data available |

### 12.5. Other adverse effects

| | |
|---|---|
| Further Information | No further information available |

## 13. Disposal considerations

### 13.1. Waste treatment methods

**Product**

Waste must be disposed of in accordance with federal, state, provincial and local regulations.

Since empty containers retain product residue, follow MSDS and label warnings even after container is emptied.

Residual vapors might explode on ignition; do not apply heat, cut, drill, grind or weld on or near this container.

**Uncleaned packaging**

Packaging material should be recycled or disposed of in accordance with federal, state and local regulations.

## 14. Transport information

**D.O.T. Road/Rail**

| | | |
|---|---|---|
| 14.1. | UN number: | UN 1866 |
| 14.2. | UN proper shipping name: | RESIN SOLUTION |
| 14.3. | Transport hazard class(es): | 3 |
| 14.4. | Packing group: | II |

14.5. Environmental hazards (Marine pollutant): --
14.6. Special precautions for user: No

**Air transport ICAO-TI/IATA-DGR**

14.1. UN number: UN 1866
14.2. UN proper shipping name: Resin solution
14.3. Transport hazard class(es): 3
14.4. Packing group: II
14.5. Environmental hazards: --
14.6. Special precautions for user: Yes
IATA-C: ERG-Code 3L
IATA-P: ERG-Code 3L

**Sea transport IMDG-Code/GGVSee (Germany)**

14.1. UN number: UN 1866
14.2. UN proper shipping name: RESIN SOLUTION
14.3. Transport hazard class(es): 3
14.4. Packing group: II
14.5. Environmental hazards (Marine pollutant): --
14.6. Special precautions for user: No
EmS: F-E,S-E

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:
for transportapproval see regulatory information

## 15. Regulatory information

### US Federal Regulations

**OSHA**

If listed below, chemical specific standards apply to the product or components:

- None listed

**Clean Air Act Section (112)**

If listed below, components present at or above the de minimus level are hazardous air pollutants:

- Methyl methacrylate
  CAS-No. 80-62-6

**CERCLA Reportable Quantities**

If listed below, a reportable quantity (RQ) applies to the product based on the percent of the named component:

- Methyl methacrylate
  CAS-No. 80-62-6
  Reportable Quantity 1429 lbs

**SARA Title III Section 311/312 Hazard Categories**

The product meets the criteria only for the listed hazard classes:

- Acute Health Hazard

- Chronic Health Hazard
- Fire Hazard
- Reactivity Hazard

**SARA Title III Section 313 Reportable Substances**

If listed below, components are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:

- Methyl methacrylate
  CAS-No. 80-62-6

**Toxic Substances Control Act (TSCA)**

If listed below, non-proprietary substances are subject to export notification under Section 12 (b) of TSCA:

- None listed

**State Regulations**

**California Proposition 65**

A warning under the California Drinking Water Act is required only if listed below:

WARNING! This product contains a chemical known to the State of California to cause cancer.

- N,N-dimethyl-p-toluidine
  CAS-No. 99-97-8

An employer using HMIS/NFPA labeling must through training ensure that its employees are fully aware of the hazards of the chemicals used.

**HMIS Ratings**

| | |
|---|---|
| Health : | 2* |
| Flammability : | 3 |
| Physical Hazard : | 2 |

**NFPA Ratings**

| | |
|---|---|
| Health : | 2 |
| Flammability : | 3 |
| Reactivity : | 2 |

## 16. Other information

**Further information**

Revision date 08/07/2015

Changes since the last version are highlighted in the margin. This version replaces all previous versions.

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## Legend

| | |
|---|---|
| **ACC** | American Chemistry Council |
| **ACGIH** | American Conference of Governmental Industrial Hygenists |
| **ACS** | Advisory Committee on Sustainability |
| **ADI** | Acceptable Daily Intake |
| **ASTM** | American Society for Testing and Materials |
| **ATP** | Adaptation to Technical Progress |
| **BCF** | Bioconcentration factor |
| **BOD** | Biochemical oxygen demand |
| **c.c.** | closed cup |
| **CAO** | Cargo Aircraft Only |
| **Carc** | Carcinogen |
| **CAS** | Chemical Abstract Services |
| **CDN** | Canada |
| **CEPA** | Canadian Environmental Protection Act |
| **CERCLA** | Comprehensive Environmental Response – Compensation and Liability Act |
| **CFR** | Code of Federal Regulations |
| **CMR** | carcinogenic-mutagenic-toxic for reproduction |
| **COD** | Chemical oxygen demand |
| **DIN** | German Institute for Standardization |
| **DMEL** | Derived minimum effect level |
| **DNEL** | Derived no effect level |
| **DOT** | Department of Transportation |
| **EC50** | half maximal effective concentration |
| **EPA** | Environmental Protection Agency |
| **ErC50** | Reduction of Growth Rate |
| **ERG** | Emergency Response Guide Book |
| **FDA** | Food and Drug Administration |
| **GHS** | Globally Harmonized System of Classification and Labelling of Chemicals (GHS) |
| **GLP** | Good Laboratory Practice |
| **GMO** | Genetic Modified Organism |
| **HCS** | Hazard Communication Standard |
| **HMIS** | Hazardous Materials Identification System |
| **IARC** | International Agency for Research on Cancer |
| **IATA** | International Air Transport Association |
| **IBC** | Intermediate Bulk Container |
| **ICAO-TI** | International Civil Aviation Organization- Technical Instructions |
| **ICCA** | International Council of Chemical Association |
| **ID** | Identification number |
| **IMDG** | International Maritime Dangerous Goods |
| **IUPAC** | International Union of Pure and Applied Chemistry |
| **ISO** | International Organization For Standardization |
| **LC50** | 50 % Lethal Concentration |
| **LD50** | 50 % Lethal Dose |
| **L(E)C50** | LC50 or EC50 |

| | |
|---|---|
| **LOAEL** | Lowest observed adverse effect level |
| **LOEL** | Lowest observed effect level |
| **MARPOL** | International Convention for the Prevention of Pollution from Ships |
| **NFPA** | National Fire Protection Association |
| **NOAEL** | No observed adverse effect level |
| **NOEC** | no observed effect concentration |
| **NOEL** | no observed effect level |
| **o. c.** | open cup |
| **OECD** | Organisation for Economic Cooperation and Development |
| **OEL** | Occupational Exposure Limit |
| **OSHA** | Occupational Safety and Health Administration |
| **PBT** | Persistent, bioaccumulative, toxic |
| **PEC** | Predicted effect concentration |
| **PNEC** | Predicted no effect concentration |
| **RQ** | Reportable Quantity |
| **SDS** | Safety Data Sheet |
| **STOT** | Specific Target Organ Toxicity |
| **UN** | United Nations |
| **vPvB** | very persistent, very bioaccumulative |
| **voc** | volatile organic compounds |
| **WHMIS** | Workplace Hazardous Materials Information System |
| **WHO** | World Health Organization |

## Section 1: IDENTIFICATION

### 1.1 PRODUCT IDENTIFIER

**Product Name:** #1 Gray

**Product Code:** Not available.

### 1.2 RECOMMENDED USE OF CHEMICAL AND RESTRICTIONS ON USE

**Use:** Non-Destructive Testing.

### 1.3 DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET

**Name/Address:** Magnaflux
155 Harlem Avenue,
Glenview, Illinois
60025

**Telephone Number:** 847-657-5300

### 1.4 EMERGENCY TELEPHONE NUMBER

**Emergency Telephone Number:** CHEMTREC 800-424-9300

**Date of Preparation:** July 11, 2014 **Version #:** 1.0

## Section 2: HAZARD(S) IDENTIFICATION

### 2.1 CLASSIFICATION OF THE CHEMICAL ACCORDING TO OSHA HAZCOM 2012

**Hazard class**

Combustible dust
Carcinogenicity 2

### 2.2 LABEL ELEMENTS ACCORDING TO OSHA HAZCOM 2012

**Hazard Pictogram:**



**Signal Word:** Warning

**Hazard Statement:** May form combustible dust concentrations in air. Suspected of causing cancer.

**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.

**Response:** If exposed or concerned: Get medical advice/attention.

**Storage:** Store locked up.

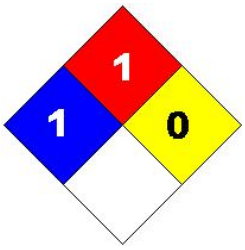
**Disposal:** Dispose of contents/container in accordance with local/regional/national/international regulations.

### 2.3 ADDITIONAL INFORMATION

**Hazards not otherwise classified:** Not applicable.

This product is a hazardous chemical as defined by NOM-018-STPS-2000.

**Mexico Classification:**




**Blue = Health Red = Flammability Yellow = Reactivity White = Special**

**Hazard Rating:** 0 = minimal, 1 = slight, 2 = moderate, 3 = severe, 4 = extreme

**WHMIS Classification(s):**
Class D2A - Carcinogenicity

**WHMIS Hazard Symbols:**



**WHMIS Signal Word:** CAUTION

## Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1 MIXTURES

| Ingredient | UN # | H / F/ R / * | CAS No | Wt. % |
|---|---|---|---|---|
| | | | | |
| Iron, elemental | UN3178 | Not available | 7439-89-6 | 60 - 100 |
| Titanium dioxide | Not available | 1/0/0 | 13463-67-7 | 7 - 13 |
| Silica, amorphous, precipitated and gel | Not available | Not available | 112926-00-8 | 0.5 - 1.5 |

The exact percentage (concentration) of composition has been withheld as a trade secret in accordance with paragraph (i) of §1910.1200.

* Per NOM-018-STPS-2000

## Section 4: FIRST- AID MEASURES

### 4.1 DESCRIPTION OF THE FIRST AID MEASURE

**Eye:** In case of contact, immediately flush eyes with plenty of water. Remove contact lenses, if worn. If irritation persists, get medical attention.

**Skin:** In case of contact, immediately flush skin with plenty of water. Call a physician if irritation develops and persists.

| | |
|---|---|
| **Inhalation:** | If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical advice/attention. |
| **Ingestion:** | If swallowed, do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical advice/attention. |

### 4.2 MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED

| | |
|---|---|
| **Eye:** | Dust may cause eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with possible redness and swelling. |
| **Skin:** | Dust may cause skin irritation. Symptoms may include redness, drying, defatting and cracking of the skin. |
| **Inhalation:** | Dust may cause respiratory tract irritation. |
| **Ingestion:** | May be harmful if swallowed. May cause stomach distress, nausea or vomiting. |

### 4.3 INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENTS NEEDED

| | |
|---|---|
| **Note to Physicians:** | Symptoms may not appear immediately. |
| **Specific Treatments:** | In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible). |

## Section 5: FIRE-FIGHTING MEASURES

### 5.1 FLAMMABILITY

| | |
|---|---|
| **Flammability:** | Combustible dust. Avoid generating dust as the product may form flammable dust/air mixtures. |

### 5.2 EXTINGUISHING MEDIA

| | |
|---|---|
| **Suitable Extinguishing Media:** | Treat for surrounding material. |
| **Unsuitable Extinguishing Media:** | Do not use a direct stream of water. |

### 5.3 SPECIAL HAZARDS ARISING FROM THE CHEMICAL

**Products of Combustion:** May include, and are not limited to: oxides of carbon, metal oxides.

**Explosion Data:**

**Sensitivity to Mechanical Impact:** Not available.

**Sensitivity to Static Discharge:** Not available.

### 5.4 SPECIAL PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIRE FIGHTERS

Firefighters should wear full protective clothing including self contained breathing apparatus. If improperly handled, stored and/or exposed to an ignition source, this material may burn. Airborne dust in sufficient concentrations when confined and exposed to a sufficient ignition source can explode.

## Section 6: ACCIDENTAL RELEASE MEASURES

### 6.1 PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES

Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Dust deposits should not be allowed to accumulate on

surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Avoid dispersal of dust in the air (i.e. clearing dust surfaces with compressed air).

### 6.2 METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING - UP

**Methods for Containment:** Contain spill, then place in a suitable container. Minimize dust generation. Do not flush to sewer or allow to enter waterways. Use appropriate Personal Protective Equipment (PPE).

**Methods for Cleaning-Up:** Vacuum or sweep material and place in a disposal container. Provide ventilation.

## Section 7: HANDLING AND STORAGE

### 7.1 PRECAUTIONS FOR SAFE HANDLING

**Handling:** Keep away from heat, sparks, and flame. Avoid contact with skin and eyes. Do not swallow. Good housekeeping is important to prevent accumulation of dust. Avoid generating and breathing dust. The use of compressed air for cleaning clothing, equipment, etc, is not recommended. Use only in well-ventilated areas. Handle and open container with care. When using do not eat or drink. (See section 8)

**General Hygiene Advice:** Launder contaminated clothing before reuse. Wash hands before eating, drinking, or smoking.

### 7.2 CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES

**Storage:** Keep out of the reach of children. Store in dust-tight, dry, labeled containers. Keep containers closed when not in use. Avoid any dust buildup by frequent cleaning and suitable construction of the storage area. Store in a cool, well-ventilated place, away from incompatibles. Keep away from sources of ignition. (See section 10)

## Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 CONTROL PARAMETERS

**Exposure Guidelines**

| Occupational Exposure Limits | | |
|---|---|---|
| **Ingredient** | **OSHA-PEL** | **ACGIH-TLV** |
| | | |
| Iron, elemental | 10 $mg/m^3$ | 5 $mg/m^3$ |
| Titanium dioxide | 15 $mg/m^3$ (total dust) | 10 $mg/m^3$ |
| Silica, amorphous, precipitated and gel | 20 mppcf; (80)/(% $SiO_2$) $mg/m^3$ | 10 $mg/m^3$ |

### 8.2 EXPOSURE CONTROLS

**Engineering Controls:** Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, etc.) below recommended exposure limits. It is recommended that all dust control equipment such as local exhaust ventilation and material transport systems involved in handling of this product contain explosion relief vents or an explosion suppression system or an oxygen-deficient environment. Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape

of dust into the work area (i.e. there is not leakage from the equipment).

### 8.3 INDIVIDUAL PROTECTIVE MEASURES

**Personal Protective Equipment:**

**Eye/Face Protection:** Wear approved eye (properly fitted dust- or splash-proof chemical safety goggles) / face (face shield) protection.

**Skin Protection:**

**Hand Protection:** Wear chemical resistant gloves.

**Body Protection:** Wear suitable protective clothing.

**Respiratory Protection:** A NIOSH approved dust mask or filtering facepiece is recommended in poorly ventilated areas or when permissible exposure limits may be exceeded. Respirators should be selected by and used under the direction of a trained health and safety professional following requirements found in OSHA's respirator standard (29 CFR 1910.134) and ANSI's standard for respiratory protection (Z88.2).

**General Health and Safety Measures:** Handle according to established industrial hygiene and safety practices. Do not eat, smoke or drink where material is handled, processed or stored. Wash hands carefully before eating or smoking.

## Section 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| **Appearance:** | Powder. |
| **Color:** | Not available. |
| **Odor:** | Odorless. |
| **Odor Threshold:** | Not available. |
| **Physical State:** | Solid. |
| **pH:** | Not available. |
| **Melting Point/Freezing Point:** | Not available. |
| **Initial Boiling Point and Boiling Range:** | Not available. |
| **Flash Point:** | Not available. |
| **Evaporation Rate:** | Not available. |
| **Flammability:** | Combustible dust. |
| **Lower Flammability/Explosive Limit:** | Not available. |
| **Upper Flammability/Explosive Limit:** | Not available. |
| **Vapor Pressure:** | Not available. |
| **Vapor Density:** | Not available. |
| **Relative Density/Specific Gravity:** | Not available. |
| **Solubility:** | Insoluble. |
| **Partition coefficient: n-octanol/water:** | Not available. |

| | |
|---|---|
| **Auto-ignition Temperature:** | Not available. |
| **Decomposition Temperature:** | Not available. |
| **Viscosity:** | Not available. |
| **Oxidizing Properties:** | Not available. |
| **Explosive Properties:** | Not available. |

## Section 10: STABILITY AND REACTIVITY

### 10.1 REACTIVITY

No dangerous reaction known under conditions of normal use.

### 10.2 CHEMICAL STABILITY

Stable under normal storage conditions. Keep dry in storage. Combustible dust.

### 10.3 POSSIBILITY OF HAZARDOUS REACTIONS

No dangerous reaction known under conditions of normal use.

### 10.4 CONDITIONS TO AVOID

Incompatible materials. Keep away from heat, sparks, and flame.

### 10.5 INCOMPATIBLE MATERIALS

Oxidizers. Acids.

### 10.6 HAZARDOUS DECOMPOSITION PRODUCTS

May include, and are not limited to: oxides of carbon, metal oxides.

## Section 11: TOXICOLOGICAL INFORMATION

### 11.1 INFORMATION ON TOXICOLOGICAL EFFECTS

**Likely Routes of Exposure:** Skin contact, eye contact, inhalation, and ingestion.

**Symptoms related to physical/chemical/toxicological characteristics:**

**Eye:** Dust may cause eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with possible redness and swelling.

**Skin:** Dust may cause skin irritation. Symptoms may include redness, drying, defatting and cracking of the skin.

**Ingestion:** May be harmful if swallowed. May cause stomach distress, nausea or vomiting.

**Inhalation:** Dust may cause respiratory tract irritation.

**Acute Toxicity:**

| Ingredient | IDLH | LC50 | LD50 |
|---|---|---|---|
| | | | |
| Iron, elemental | 2,500 mg Fe/$m^3$ | Not available. | Oral > 5000 mg/kg, rat |
| Titanium dioxide | 5,000 mg/$m^3$ | Not available. | Oral >10000 mg/kg, rat<br>Dermal >10000mg/kg, rabbit |
| Silica, amorphous, precipitated and gel | Not available. | Not available. | Not available. |

| Calculated overall Chemical Acute Toxicity Values | | |
|---|---|---|
| **LC50 (inhalation)** | **LD50 (oral)** | **LD50 (dermal)** |
| Not available. | > 2000 mg/kg, rat | Not available. |

| **Ingredient** | **Chemical Listed as Carcinogen or Potential Carcinogen (NTP, IARC, OSHA, ACGIH, CP65)*** |
|---|---|
| Iron, elemental | Not listed. |
| Titanium dioxide | G-A4, I-2B, CP65 |
| Silica, amorphous, precipitated and gel | I-3 |

* See Section 15 for more information.

### 11.2 DELAYED, IMMEDIATE, AND CHRONIC EFFECTS OF SHORT- AND LONG-TERM EXPOSURE

**Skin Corrosion/Irritation:** Based on available data, the classification criteria are not met.

**Serious Eye Damage/Irritation:** Based on available data, the classification criteria are not met.

**Respiratory Sensitization:** Based on available data, the classification criteria are not met.

**Skin Sensitization:** Based on available data, the classification criteria are not met.

**STOT-Single Exposure:** Based on available data, the classification criteria are not met.

**Chronic Health Effects:**

**Carcinogenicity:** Suspected of causing cancer.

**Germ Cell Mutagenicity:** Based on available data, the classification criteria are not met.

**Reproductive Toxicity:**

**Developmental:** Based on available data, the classification criteria are not met.

**Teratogenicity:** Based on available data, the classification criteria are not met.

**Embryotoxicity:** Based on available data, the classification criteria are not met.

**Fertility:** Based on available data, the classification criteria are not met.

**STOT-Repeated Exposure:** Based on available data, the classification criteria are not met.

**Aspiration Hazard:** Based on available data, the classification criteria are not met.

**Toxicologically Synergistic Materials:** Not available.

**Other Information:** Not available.

## Section 12: ECOLOGICAL INFORMATION

### 12.1 ECOTOXICITY

**Acute/Chronic Toxicity:** May cause long-term adverse effects in the aquatic environment.

### 12.2 PERSISTENCE AND DEGRADABILITY

Not available.

### 12.3 BIOACCUMULATIVE POTENTIAL

**Bioaccumulation:** Not available.

### 12.4 MOBILITY IN SOIL

Not available.

### 12.5 OTHER ADVERSE EFFECTS

Not available.

## Section 13: DISPOSAL CONSIDERATIONS

### 13.1 WASTE TREATMENT METHODS

| | |
|---|---|
| **Disposal Method:** | This material must be disposed of in accordance with all local, state, provincial, and federal regulations. |
| **Other disposal recommendations:** | Not available. |

## Section 14: TRANSPORT INFORMATION

### 14.1 UN NUMBER

| DOT | TDG | NOM-004-SCT2-1994 |
|---|---|---|
| Not regulated. | Not regulated. | Not regulated. |

### 14.2 UN PROPER SHIPPING NAME

| DOT | TDG | NOM-004-SCT2-1994 |
|---|---|---|
| Not applicable. | Not applicable. | Not applicable. |

### 14.3 TRANSPORT HAZARD CLASS (ES)

| DOT | TDG | NOM-004-SCT2-1994 |
|---|---|---|
| Not applicable. | Not applicable. | Not applicable. |

### 14.4 PACKING GROUP

| DOT | TDG | NOM-004-SCT2-1994 |
|---|---|---|
| Not applicable. | Not applicable. | Not applicable. |

### 14.5 ENVIRONMENTAL HAZARDS

Not available.

### 14.6 TRANSPORT IN BULK ACCORDING TO ANNEX II OF MARPOL 73/78 AND THE IBC CODE

Not available.

### 14.7 SPECIAL PRECAUTIONS FOR USER

Do not handle until all safety precautions have been read and understood.

## Section 15: REGULATORY INFORMATION

### 15.1 SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS/ LEGISLATIONS SPECIFIC FOR THE CHEMICAL

**Canada:** This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations.

**US:** SDS prepared pursuant to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012

**Mexico:** SDS prepared pursuant to NOM-018-STPS-2000.

| SARA Title III | | | | |
|---|---|---|---|---|
| **Ingredient** | **Section 302 (EHS) TPQ (lbs.)** | **Section 304 EHS RQ (lbs.)** | **CERCLA RQ (lbs.)** | **Section 313** |
| Iron, elemental | Not listed. | Not listed. | Not listed. | Not listed. |
| Titanium dioxide | Not listed. | Not listed. | Not listed. | Not listed. |
| Silica, amorphous, precipitated and gel | Not listed. | Not listed. | Not listed. | Not listed. |

**State Regulations**

**California Proposition 65:**

This product contains a chemical known to the State of California to cause cancer.

**Global Inventories:**

| **Ingredient** | **Canada DSL/NDSL** | **USA TSCA** |
|---|---|---|
| Iron, elemental | DSL | Yes. |
| Titanium dioxide | DSL | Yes. |
| Silica, amorphous, precipitated and gel | DSL | No. |

| NFPA-National Fire Protection Association: | |
|---|---|
| **Health:** | 1 |
| **Fire:** | 1 |
| **Reactivity:** | 0 |

| HMIS-Hazardous Materials Identification System: | |
|---|---|
| **Health:** | 1* |
| **Fire:** | 1 |
| **Physical Hazard:** | 0 |

**Hazard Rating:** 0 = minimal, 1 = slight, 2 = moderate, 3 = severe, 4 = extreme

**SOURCE AGENCY CARCINOGEN CLASSIFICATIONS:**

**CP65** **California Proposition 65**

**OSHA (O)** **Occupational Safety and Health Administration.**

**ACGIH (G)** **American Conference of Governmental Industrial Hygienists.**
A1 - Confirmed human carcinogen.
A2 - Suspected human carcinogen.
A3 - Animal carcinogen.
A4 - Not classifiable as a human carcinogen.
A5 - Not suspected as a human carcinogen.

**IARC (I)** **International Agency for Research on Cancer.**
1 - The agent (mixture) is carcinogenic to humans.
2A - The agent (mixture) is probably carcinogenic to humans; there is limited evidence of carcinogenicity in humans and sufficient evidence of carcinogenicity in experimental animals.
2B - The agent (mixture) is possibly carcinogenic to humans; there is limited evidence of carcinogenicity in humans in the absence of sufficient evidence of carcinogenicity in experimental animals.
3 - The agent (mixture, exposure circumstance) is not classifiable as to its carcinogenicity to humans.

4 - The agent (mixture, exposure circumstance) is probably not carcinogenic to humans.

**NTP (N)** **National Toxicology Program.**
1 - Known to be carcinogens.
2 - Reasonably anticipated to be carcinogens.

## Section 16: OTHER INFORMATION

| | |
|---|---|
| **Date of Preparation:** | July 11, 2014 |
| **Expiry Date:** | July 11, 2017 |
| **Version:** | 1.0 |
| **Revision Date:** | July 11, 2014 |

**Conforms to OSHA HazCom 2012, CPR & NOM-018-STPS-2000 Standards**

**Disclaimer:** We believe the statements, technical information and recommendations contained herein are reliable, but they are given without warranty or guarantee of any kind. The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for the user's own particular use.

**Prepared by:** Nexreg Compliance Inc.
Phone: (519) 488-5126
www.nexreg.com

**Prepared for:** Magnaflux

# End of Safety Data Sheet

# SAFETY DATA SHEET



## SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

**Product:** **Fiber Expansion Joint Filler** **Part Number: 1103360**

**Manufacturer:** **W. R. Meadows®, Inc.** **Address:** 300 Industrial Drive, Hampshire, Illinois 60140

**Telephone:** (847) 214-2100 In case of emergency, dial (800) 424-9300 (CHEMTREC)

**Revision Date:** 9/9/2014

**Product Use:** Expansion Joint in Concrete Construction

## SECTION 2: HAZARDS IDENTIFICATION/EXPOSURE LIMITS

| HMIS | |
|---|---|
| \|Health\| | \|1\| |
| \|Flammability\| | \|1\| |
| \|Reactivity\| | \|0\| |
| \|Personal Protection\| | \| \| |

Product is classified as non-hazardous per OSHA 1910.1200. Fiber Expansion Joint is defined by OSHA as an "article." A manufactured item that is formed to a specific shape or design during manufacture that does not release or result in exposure to a hazardous chemical under normal use conditions.

## SECTION 3: HAZARDS COMPONENTS

| Chemical Name: | CAS Number | % by Weight | SARA 313 | Vapor Pressure (mm Hg@20°C) | LEL @24°C) |
|---|---|---|---|---|---|
| 1. Petroleum Asphalt | 8052-42-4 | 35-40 | No | N/A | N/A |

Under the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1966 (SARA) and 40 CFR Part 372, chemicals listed on the 313 List (40 CFR Part 373.65) are identified under the heading "SARA 313." *N/A = Not Applicable*

## SECTION 4: EMERGENCY AND FIRST AID PROCEDURES

**EYE CONTACT:** Flush eyes with water to remove fibers

**SKIN CONTACT:** Flush with water to remove fibers. Wash affected areas with soap and water if available

**INHALATION:** Not expected to be an exposure route. If a dust exposure occurs, remove victim from exposure source and treat symptomatically.

**INGESTION:** Not expected to be an exposure source.

## SECTION 5: FIRE AND EXPLOSIVES HAZARDS

**FLASHPOINT:** >400° degrees F

**EXTINGUISHING MEDIA:** Water fog, foam, dry chemical.

**CHEMICAL/COMBUSTION HAZARDS:** Stacked material will retain heat and has the potential to reignite.

**PRECAUTIONS/PERSONAL PROTECTIVE EQUIPMENT:** Avoid smoke inhalation. Use appropriate respiratory protection.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

**SPILL OR LEAK PROCEDURES:** Not applicable. Product is a solid.

## SECTION 7: HANDLING AND STORAGE

**SAFE HANDLING PROCEDURES:** Avoid direct contact.

**SAFE STORAGE:** None

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

| | OSHA | | | | ACGIH | | | |
|---|---|---|---|---|---|---|---|---|
| Chemical Name: | PEL | PEL/CEILING | PEL/STEL | SKIN | TLV | TLV/CEILING | TLV/STEL | SKIN |
| 1. Petroleum Asphalt | 5 mg/m$^3$* | N/E | N/E | No | 0.5 mg/m$^3$* | N/E | N/E | N/E |

**ENGINEERING CONTROLS:** None required under normal use conditions.

**PERSONAL PROTECTIVE EQUIPMENT:** Safety glasses, chemical-resistant gloves. *N/E = Not Established* *: Asphalt Fumes

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

**BOILING POINT:** N/A **VAPOR DENSITY:** N/A **% VOLATILE BY VOLUME:** N/A

**EVAPORATION RATE:** N/A **pH LEVEL:** N/A **% VOLATILE BY WEIGHT:** N/A

**WEIGHT PER GALLON:** N/A **PRODUCT APPEARANCE:** Black Board **VOC CONTENT:** N/A

## SECTION 10: STABILITY/REACTIVITY

**STABILITY:** Stable. **HAZARDOUS POLYMERIZATION:** Will not occur.

**CONDITIONS AND MATERIALS TO AVOID:** None recognized.

**HAZARDOUS DECOMPOSITION PRODUCTS:** None recognized.

## SECTION 11: TOXICOLOGICAL INFORMATION

**EYE CONTACT:** Direct contact may cause mild irritation.

**SKIN CONTACT:** Direct contact may cause slight skin irritation.

**INHALATION:** Not anticipated to be an exposure route.

**INGESTION:** Not anticipated to be an exposure route.

**SIGNS AND SYMPTOMS:** Symptoms of eye irritation include tearing, reddening, and swelling. Symptoms of skin irritation include redness and swelling. Gastrointestinal irritation symptoms include nausea, vomiting, and abdominal discomfort.

**AGGRAVATED MEDICAL CONDITIONS:** None recognized.

**OTHER HEALTH EFFECTS:** Wood dust is listed by the IARC as a human carcinogen (Group 1)

# SAFETY DATA SHEET



## SECTION 12: ECOLOGICAL INFORMATION

**ECOTOXICITY:** N/E **DEGRADABILITY:** N/E **BIOACCUMULATIVE POTENTIAL:** N/E
**SOIL MOBILITY:** N/E **OTHER ADVERSE EFFECTS:** None Recognized

## SECTION 13: WASTE DISPOSAL INFORMATION

**WASTE DISPOSAL INFORMATION:** Product is classified as a non-hazardous waste.

## SECTION 14: TRANSPORTATION INFORMATION

**HAZARDOUS/NON-HAZARDOUS MATERIAL:** Not regulated by DOT.
**UN NUMBER:** None **HAZARD CLASS:** N/A **PACKING GROUP:** N/A
**UN PROPER SHIPPING NAME:** N/A
**ENVIRONMENTAL HAZARDS:** None recognized.
**BULK TRANSPORTATION INFORMATION:** None.
**SPECIAL PRECAUTIONS:** None.

## SECTION 15: REGULATORY INFORMATION

**OTHER REGULATORY CONSIDERATIONS:** None recognized.

## SECTION 16: OTHER INFORMATION

**PREPARATION DATE:** 9/9/2014
**PREPARED BY:** Dave Carey

*The information contained herein is based on the data available to us and is believed to be correct. However, we make no warranty, expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof. We assume no responsibility for injury from the use of this product described herein.*

HOWES LUBRICATOR® PRODUCTS

Professional Grade Performance Since 1920

# MATERIAL SAFETY DATA SHEET

Howes Lubricator Diesel Treat



## Section 1. PRODUCT AND COMPANY IDENTIFICATION

| | |
|---|---|
| Product Name: | Howes Lubricator Diesel Treat |
| Company Identification: | R.B. Howes & Co., Inc.<br>60 Ocean State Drive<br>North Kingstown, RI 02852 |
| Emergency Telephone Number: | Chemtrec 1-800-424-9300 |

## Section 2. COMPOSITION/INFORMATION ON INGREDIENTS

| Component | CAS # | % by Volume |
|---|---|---|
| Light Aromatic Naphtha | 64742-95-6 | 1.5 – 3 |
| Naphthalene | 91-20-3 | .5 – 1.5 |
| 1,2,4 Trimethylbenzene | 95-63-6 | .5 – 1.5 |
| 1,3,5 Trimethylbenzene | 108-67-8 | .20 – .60 |
| Trimethylbenzene | 25551-13-7 | .20 – .60 |
| Cumene | 98-82-8 | .20 – .60 |
| Xylene | 1330-20-7 | .20 – .60 |
| 1,2,3 Trimethylbenzene | 526-73-8 | .10 –.30 |
| Ethylbenzene | 100-41-4 | .01 – .05 |
| Vinyl Acetate | 108-05-4 | .01 –.05 |

## Section 3. HAZARDS IDENTIFICATION

### Emergency Overview

Light amber oil-like liquid with distinctive odor. Prolonged or repeated skin contact may cause skin irritation. Ingestion harmful or fatal if not treated. Prolonged exposure to heavy concentrations of fumes may cause irritation to mucus membranes and airway. Respiratory diseases such as asthma and skin conditions such as rashes, cuts or similar skin diseases are generally aggravated by exposure. Combustible. Do not handle near excessive heat, sparks, flame or strong oxidants. Incompatible with (material to avoid) strong oxidants like liquid chlorine or concentrated oxygen. Presents a slipping hazard if spilled.

### Primary Routes of Exposure

Eyes, skin, ingestion and inhalation

### Potential Health Effects

| | |
|---|---|
| Eye Contact: | Can cause redness and mild irritation. |
| Skin Contact: | Can cause redness and mild irritation with prolonged contact. |
| Ingestion: | Can cause cramps and nausea. |
| Inhalation: | Repeated or prolonged exposure may irritate the respiratory tract. |

## Section 4. FIRST AID MEASURES

Eye contact:
Flush with water for 15 minutes, or until irritation subsides.

Skin contact:
Wash with soap and water.

Ingestion:
Do not induce vomiting. Water may be given slowly. Contact physician immediately.

Inhalation:
Remove to fresh air.

Additionally:
In all cases, if symptoms persist, contact physician.

## Section 5. FIRE FIGHTING MEASURES

Flash point:
156°F / 69°C (Setaflash Closed-Cup)

Autoignition temperature:
Data not available.

Upper flammable limit:
Data not available.

Lower flammable limit:
Data not available.

Extinguishing media:
Foam, CO2, water fog or spray.

Fire fighting equipment:
Recommend wearing self contained breathing apparatus. Avoid breathing vapors or fumes. Cool exposed containers with water spray.

Unusual fire and explosion hazard:
Combustible liquid. May form combustible mixtures at or above the flash point. Empty product containers may contain product residue. Do not pressurize, cut, heat, weld or expose containers to flame or other sources of ignition.

## Section 6. ACCIDENTAL RELEASE MEASURE

Soak up the spill with oil absorbents. Place residue in suitable, covered, properly labeled container. Dispose in accordance with federal, state and local laws.

## Section 7. HANDLING AND STORAGE

Keep away from sources of ignition. Keep container closed when not in use.

## Section 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

| | | | |
|---|---|---|---|
| Exposure Limits | Light Aromatic Naphtha | Not available | |
| | Naphthalene | OSHA TWA:<br>ACGIH TWA: | 10 ppm, 50 mg/m³<br>10 ppm, 52 mg/m³ |
| | 1,2,4 Trimethylbenzene | Not available | |
| | 1,3,5 Trimethylbenzene | Not available | |
| | Trimethylbenzene | OSHA TWA:<br>ACGIH TWA: | 25 ppm, 125 mg/m³<br>25 ppm, 123 mg/m³ |
| | Cumene | OSHA TWA:<br>ACGIH TWA: | 50 ppm, 245 mg/m³<br>50 ppm, 246 mg/m³ |
| | Xylene | OSHA TWA:<br>ACGIH TWA: | 100 ppm, 435 mg/m³<br>100 ppm, 434 mg/m³ |
| | 1,2,3 Trimethylbenzene | Not available | |
| | Ethylbenzene | OSHA TWA:<br>ACGIH TWA: | 100 ppm, 435 mg/m³<br>100 ppm, 435 mg/m³ |
| | Vinyl Acetate | OSHA TWA:<br>ACGIH TWA: | 10 ppm, 30 mg/m³<br>10 ppm, 35 mg/m³ |

## Section 8. EXPOSURE CONTROLS / PERSONAL PROTECTION (continued)

Engineering Controls
Good general ventilation should be sufficient to control airborne levels.

Respiratory Protection
This material does not have established exposure limits. Wear a positive-pressure air-supplied respirator in situations where there may be potential for airborne exposure.

Skin Protection
For brief contact, no precautions other than clean body-covering clothing should be needed. Use chemical resistant gloves such as neoprene.

Eye Protection
Safety glasses with side shield, anti-splash goggles or face shield.

Hygiene Recommendations
Keep an eyewash kit available. If clothing is contaminated, remove clothing and thoroughly wash the affected area. Launder contaminated clothing before reuse. Avoid contact with skin and eyes.

## Section 9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| Appearance: | Light amber |
| Odor: | Distinctive |
| Physical State: | Liquid |
| pH: | Not determined |
| Vapor Pressure: | <.1mm Hg |
| Vapor Density: | >1 (air = 1) |
| Boiling Point: | 327°F / 164°C |
| Freezing Point: | Not determined |
| Solubility in Water: | Insoluble |
| Specific Gravity: | <.9 (H2O = 1) |

## Section 10. STABILITY AND REACTIVITY

| | |
|---|---|
| Stability: | Stable under normal conditions. |
| Conditions to Avoid | Excessive heat, sparks, flames or strong oxidants. |
| Materials to Avoid: | Contact with strong oxidizers like chlorine or concentrated oxygen. |
| Hazardous Decomposition Products / Byproducts: | Under fire conditions: Carbon oxides (CO, CO2) |
| Hazardous Polymerization: | Hazardous polymerization will not occur. |

## Section 11. TOXICOLOGICAL INFORMATION

| | | |
|---|---|---|
| Light Aromatic Naphtha | ORAL (LD50): | Acute: 2,900 mg/kg (Rat) |
| Naphthalene | ORAL (LD50): | Acute: 490 mg/kg (Rat) |
| 1,2,4 Trimethylbenzene | ORAL (LD50): | Acute: 5,000 mg/kg (Rat) |
| 1,3,5 Trimethylbenzene | VAPOR (LC50): | Acute: 24,000 mg/m³ (Rat) |
| Trimethylbenzene | ORAL (LD50): | Acute: 8,970 mg/kg (Rat) |
| Cumene | ORAL (LD50): | Acute: 1,400 mg/kg (Rat) |
| Xylene | ORAL (LD50): | Acute: 4,300 mg/kg (Rat) |
| 1,2,3 Trimethylbenzene | Not available | |
| Ethylbenzene | ORAL (LD50): | Acute: 3,500 mg/kg (Rat) |
| Vinyl Acetate | ORAL (LD50): | Acute: 2,900 mg/kg (Rat) |

## Section 12. ECOLOGICAL INFORMATION

No ecotoxicological studies have been conducted on this product.

## Section 13. DISPOSAL CONSIDERATIONS

Waste management should be in compliance with federal, state and local laws.

## Section 14. TRANSPORT INFORMATION

The information in this section is for reference only and should not take the place of a shipping paper (bill of lading) specific to an order. Please note that the proper Shipping Name / Hazard Class may vary by packaging, properties and mode of transportation. Typical Proper Shipping Names for this product are:

| | |
|---|---|
| Proper Shipping Name: | Petroleum distillates, n.o.s. |
| UN Identification Number: | UN1268 |
| Hazard Class – Primary: | 3 |
| Packing Group: | III |
| Flash Point: | 156°F / 69°C |

## Section 15. REGULATORY INFORMATION

U.S. Regulations:

Clean Air Act (CAA) 112(r) Accidental Release Prevention Substances: Naphthalene, Vinyl Acetate.

Clean Water Act (CWA) 307 Priority Pollutants: Ethylbenzene, Naphthalene

Clean Water Act (CWA) 311 Hazardous Substances: Ethylbenzene, Naphthalene, Vinyl Acetate, Xylene.

CERCLA 302 Hazardous Substances: Cumene RQ 1 lb., Ethylbenzene RQ 1,000 lbs., Naphthalene RQ 100 lbs., Xylene RQ 100 lbs.

Proposition 65 California Safe Drinking Water and Toxic Enforcement Act of 1986: (Known to cause cancer) Ethylbenzene, Naphthalene.

SARA 302/304 Emergency Planning and Notification Substances: No products were found.

SARA 313 Toxic Chemical Notification: Cumene, Ethylbenzene, Naphthalene, 1,2,4 Trimethylbenzene, Vinyl Acetate, Xylene.

TSCA Inventory Status: All components are included or are exempted from listing on the US Toxic Substances Control Act Inventory.

## Section 16. OTHER INFORMATION

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM (HMIS)

| | |
|---|---|
| Health | 1 |
| Flammability | 2 |
| Reactivity | 0 |
| Personal Protection | B |

MSDS PREPARATION

| | |
|---|---|
| Prepared By: | Quality Control Department |
| Date: | February 2008 |

The recommendations and data presented herein are based on sources considered to be reliable. Any use inconsistent with our recommendations may affect the risk characterization. However, no warranty is expressed or implied regarding the accuracy of the data or the results obtained from the use of this information or the use of the product. R.B. Howes & Co., Inc. expressly disclaims all liability for loss or damage, including consequential loss, or injury to persons (including death) arising directly or indirectly from reliance upon the information or use of the material.

# Safety Data Sheet

**Material Name: Diesel Fuel, All Types**

**SDS No. 9909**
**US GHS**

**Synonyms:** Ultra Low Sulfur Diesel; Low Sulfur Diesel; No. 2 Diesel; Motor Vehicle Diesel Fuel; Non-Road Diesel Fuel; Locomotive/Marine Diesel Fuel

## * * * Section 1 - Product and Company Identification * * *

### Manufacturer Information

Hess Corporation
1 Hess Plaza
Woodbridge, NJ 07095-0961

Phone: 732-750-6000 Corporate EHS
Emergency # 800-424-9300 CHEMTREC
www.hess.com (Environment, Health, Safety Internet Website)

## * * * Section 2 - Hazards Identification * * *

### GHS Classification:

Flammable Liquids - Category 3
Skin Corrosion/Irritation – Category 2
Germ Cell Mutagenicity – Category 2
Carcinogenicity - Category 2
Specific Target Organ Toxicity (Single Exposure) - Category 3 (respiratory irritation, narcosis)
Aspiration Hazard – Category 1
Hazardous to the Aquatic Environment, Acute Hazard – Category 3

### GHS LABEL ELEMENTS

### Symbol(s)



### Signal Word

DANGER

### Hazard Statements

Flammable liquid and vapor.
Causes skin irritation.
Suspected of causing genetic defects.
Suspected of causing cancer.
May cause respiratory irritation.
May cause drowsiness or dizziness.
May be fatal if swallowed and enters airways.
Harmful to aquatic life.

### Precautionary Statements

**Prevention**

Keep away from heat/sparks/open flames/hot surfaces. No smoking
Keep container tightly closed.
Ground/bond container and receiving equipment.

Use explosion-proof electrical/ventilating/lighting/equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Wear protective gloves/protective clothing/eye protection/face protection.
Wash hands and forearms thoroughly after handling.
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Avoid breathing fume/mist/vapours/spray.

**Response**
In case of fire: Use water spray, fog or foam to extinguish.
IF ON SKIN (or hair): Wash with plenty of soap and water. Remove/Take off immediately all contaminated clothing and wash it before reuse. If skin irritation occurs: Get medical advice/attention.
IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell.
If swallowed: Immediately call a poison center or doctor. Do NOT induce vomiting.
IF exposed or concerned: Get medical advice/attention.

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

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

## * * * Section 3 - Composition / Information on Ingredients * * *

| CAS # | Component | Percent |
|---|---|---|
| 68476-34-6 | Fuels, diesel, no. 2 | 100 |
| 91-20-3 | Naphthalene | <0.1 |

A complex mixture of hydrocarbons with carbon numbers in the range C9 and higher.

## * * * Section 4 - First Aid Measures * * *

### First Aid: Eyes
In case of contact with eyes, immediately flush with clean, low-pressure water for at least 15 min. Hold eyelids open to ensure adequate flushing. Seek medical attention.

### First Aid: Skin
Remove contaminated clothing. Wash contaminated areas thoroughly with soap and water or with waterless hand cleanser. Obtain medical attention if irritation or redness develops. Thermal burns require immediate medical attention depending on the severity and the area of the body burned.

### First Aid: Ingestion
DO NOT INDUCE VOMITING. Do not give liquids. Obtain immediate medical attention. If spontaneous vomiting occurs, lean victim forward to reduce the risk of aspiration. Monitor for breathing difficulties. Small amounts of material which enter the mouth should be rinsed out until the taste is dissipated.

### First Aid: Inhalation

Remove person to fresh air. If person is not breathing, provide artificial respiration. If necessary, provide additional oxygen once breathing is restored if trained to do so. Seek medical attention immediately.

## * * * Section 5 - Fire Fighting Measures * * *

### General Fire Hazards

See Section 9 for Flammability Properties.

Vapors may be ignited rapidly when exposed to heat, spark, open flame or other source of ignition. When mixed with air and exposed to an ignition source, flammable vapors can burn in the open or explode in confined spaces. Being heavier than air, vapors may travel long distances to an ignition source and flash back. Runoff to sewer may cause fire or explosion hazard.

### Hazardous Combustion Products

Carbon monoxide, carbon dioxide and non-combusted hydrocarbons (smoke).

### Extinguishing Media

SMALL FIRES: Any extinguisher suitable for Class B fires, dry chemical, CO2, water spray, fire fighting foam, and other gaseous agents.

LARGE FIRES: Water spray, fog or fire fighting foam. Water may be ineffective for fighting the fire, but may be used to cool fire-exposed containers.

### Unsuitable Extinguishing Media

None

### Fire Fighting Equipment/Instructions

Small fires in the incipient (beginning) stage may typically be extinguished using handheld portable fire extinguishers and other fire fighting equipment. Firefighting activities that may result in potential exposure to high heat, smoke or toxic by-products of combustion should require NIOSH/MSHA- approved pressure-demand self-contained breathing apparatus with full facepiece and full protective clothing. Isolate area around container involved in fire. Cool tanks, shells, and containers exposed to fire and excessive heat with water. For massive fires the use of unmanned hose holders or monitor nozzles may be advantageous to further minimize personnel exposure. Major fires may require withdrawal, allowing the tank to burn. Large storage tank fires typically require specially trained personnel and equipment to extinguish the fire, often including the need for properly applied fire fighting foam.

## * * * Section 6 - Accidental Release Measures * * *

### Recovery and Neutralization

Carefully contain and stop the source of the spill, if safe to do so.

### Materials and Methods for Clean-Up

Take up with sand or other oil absorbing materials. Carefully shovel, scoop or sweep up into a waste container for reclamation or disposal. Caution, flammable vapors may accumulate in closed containers.

### Emergency Measures

Evacuate nonessential personnel and remove or secure all ignition sources. Consider wind direction; stay upwind and uphill, if possible. Evaluate the direction of product travel, diking, sewers, etc. to confirm spill areas. Spills may infiltrate subsurface soil and groundwater; professional assistance may be necessary to determine the extent of subsurface impact.

### Personal Precautions and Protective Equipment

Response and clean-up crews must be properly trained and must utilize proper protective equipment (see Section 8).

### Environmental Precautions

Protect bodies of water by diking, absorbents, or absorbent boom, if possible. Do not flush down sewer or drainage systems, unless system is designed and permitted to handle such material. The use of fire fighting foam may be useful in certain situations to reduce vapors. The proper use of water spray may effectively disperse product vapors or the liquid itself, preventing contact with ignition sources or areas/equipment that require protection.

### Prevention of Secondary Hazards

None

## * * * Section 7 - Handling and Storage * * *

### Handling Procedures

Handle as a combustible liquid. Keep away from heat, sparks, excessive temperatures and open flame! No smoking or open flame in storage, use or handling areas. Bond and ground containers during product transfer to reduce the possibility of static-initiated fire or explosion.

Special slow load procedures for "switch loading" must be followed to avoid the static ignition hazard that can exist when higher flash point material (such as fuel oil) is loaded into tanks previously containing low flash point products (such as this product) - see API Publication 2003, "Protection Against Ignitions Arising Out Of Static, Lightning and Stray Currents."

### Storage Procedures

Keep away from flame, sparks, excessive temperatures and open flame. Use approved vented containers. Keep containers closed and clearly labeled. Empty product containers or vessels may contain explosive vapors. Do not pressurize, cut, heat, weld or expose such containers to sources of ignition.

Store in a well-ventilated area. This storage area should comply with NFPA 30 "Flammable and Combustible Liquid Code". Avoid storage near incompatible materials. The cleaning of tanks previously containing this product should follow API Recommended Practice (RP) 2013 "Cleaning Mobile Tanks In Flammable and Combustible Liquid Service" and API RP 2015 "Cleaning Petroleum Storage Tanks."

### Incompatibilities

Keep away from strong oxidizers.

## * * * Section 8 - Exposure Controls / Personal Protection * * *

### Component Exposure Limits

**Fuels, diesel, no. 2 (68476-34-6)**

ACGIH: 100 mg/m3 TWA (inhalable fraction and vapor, as total hydrocarbons, listed under Diesel fuel)
Skin - potential significant contribution to overall exposure by the cutaneous route (listed under Diesel fuel)

**Naphthalene (91-20-3)**

ACGIH: 10 ppm TWA
15 ppm STEL
Skin - potential significant contribution to overall exposure by the cutaneous route
OSHA: 10 ppm TWA; 50 mg/m3 TWA
NIOSH: 10 ppm TWA; 50 mg/m3 TWA
15 ppm STEL; 75 mg/m3 STEL

### Engineering Measures

Use adequate ventilation to keep vapor concentrations of this product below occupational exposure and flammability limits, particularly in confined spaces.

### Personal Protective Equipment: Respiratory

A NIOSH/MSHA-approved air-purifying respirator with organic vapor cartridges or canister may be permissible under certain circumstances where airborne concentrations are or may be expected to exceed exposure limits or for odor or irritation. Protection provided by air-purifying respirators is limited.

Use a positive pressure, air-supplied respirator if there is a potential for uncontrolled release, exposure levels are not known, in oxygen-deficient atmospheres, or any other circumstance where an air-purifying respirator may not provide adequate protection.

### Personal Protective Equipment: Hands

Gloves constructed of nitrile, neoprene, or PVC are recommended.

### Personal Protective Equipment: Eyes

Safety glasses or goggles are recommended where there is a possibility of splashing or spraying.

### Personal Protective Equipment: Skin and Body

Chemical protective clothing such as of E.I. DuPont TyChem®, Saranex® or equivalent recommended based on degree of exposure. Note: The resistance of specific material may vary from product to product as well as with degree of exposure. Consult manufacturer specifications for further information.

## * * * Section 9 - Physical & Chemical Properties * * *

| | | | |
|---|---|---|---|
| **Appearance:** | Clear, straw-yellow. | **Odor:** | Mild, petroleum distillate odor |
| **Physical State:** | Liquid | **pH:** | ND |
| **Vapor Pressure:** | 0.009 psia @ 70 °F (21 °C) | **Vapor Density:** | >1.0 |
| **Boiling Point:** | 320 to 690 °F (160 to 366 °C) | **Melting Point:** | ND |
| **Solubility (H2O):** | Negligible | **Specific Gravity:** | 0.83-0.876 @ 60°F (16°C) |
| **Evaporation Rate:** | Slow; varies with conditions | **VOC:** | ND |
| **Percent Volatile:** | 100% | **Octanol/H2O Coeff.:** | ND |
| **Flash Point:** | >125 °F (>52 °C) minimum | **Flash Point Method:** | PMCC |
| **Upper Flammability Limit (UFL):** | 7.5 | **Lower Flammability Limit (LFL):** | 0.6 |
| **Burning Rate:** | ND | **Auto Ignition:** | 494°F (257°C) |

## * * * Section 10 - Chemical Stability & Reactivity Information * * *

### Chemical Stability

This is a stable material.

### Hazardous Reaction Potential

Will not occur.

## Conditions to Avoid

Avoid high temperatures, open flames, sparks, welding, smoking and other ignition sources.

## Incompatible Products

Keep away from strong oxidizers.

## Hazardous Decomposition Products

Carbon monoxide, carbon dioxide and non-combusted hydrocarbons (smoke).

# * * * Section 11 - Toxicological Information * * *

## Acute Toxicity

### A: General Product Information

Harmful if swallowed.

### B: Component Analysis - LD50/LC50

**Naphthalene (91-20-3)**

Inhalation LC50 Rat >340 mg/m3 1 h; Oral LD50 Rat 490 mg/kg; Dermal LD50 Rat >2500 mg/kg; Dermal LD50 Rabbit >20 g/kg

## Potential Health Effects: Skin Corrosion Property/Stimulativeness

Practically non-toxic if absorbed following acute (single) exposure. May cause skin irritation with prolonged or repeated contact. Liquid may be absorbed through the skin in toxic amounts if large areas of skin are repeatedly exposed.

## Potential Health Effects: Eye Critical Damage/ Stimulativeness

Contact with eyes may cause mild irritation.

## Potential Health Effects: Ingestion

Ingestion may cause gastrointestinal disturbances, including irritation, nausea, vomiting and diarrhea, and central nervous system (brain) effects similar to alcohol intoxication. In severe cases, tremors, convulsions, loss of consciousness, coma, respiratory arrest, and death may occur.

## Potential Health Effects: Inhalation

Excessive exposure may cause irritations to the nose, throat, lungs and respiratory tract. Central nervous system (brain) effects may include headache, dizziness, loss of balance and coordination, unconsciousness, coma, respiratory failure, and death.

WARNING: the burning of any hydrocarbon as a fuel in an area without adequate ventilation may result in hazardous levels of combustion products, including carbon monoxide, and inadequate oxygen levels, which may cause unconsciousness, suffocation, and death.

## Respiratory Organs Sensitization/Skin Sensitization

This product is not reported to have any skin sensitization effects.

## Generative Cell Mutagenicity

This material has been positive in a mutagenicity study.

## Carcinogenicity

### A: General Product Information

Suspected of causing cancer.

Studies have shown that similar products produce skin tumors in laboratory animals following repeated applications without washing or removal. The significance of this finding to human exposure has not been determined. Other studies with active skin carcinogens have shown that washing the animal's skin with soap and water between applications reduced tumor formation.

### B: Component Carcinogenicity

**Fuels, diesel, no. 2 (68476-34-6)**

ACGIH: A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans (listed under Diesel fuel)

**Naphthalene (91-20-3)**

ACGIH: A4 - Not Classifiable as a Human Carcinogen
NTP: Reasonably Anticipated To Be A Human Carcinogen (Possible Select Carcinogen)
IARC: Monograph 82 [2002] (Group 2B (possibly carcinogenic to humans))

## Reproductive Toxicity

This product is not reported to have any reproductive toxicity effects.

## Specified Target Organ General Toxicity: Single Exposure

This product is not reported to have any specific target organ general toxicity single exposure effects.

## Specified Target Organ General Toxicity: Repeated Exposure

This product is not reported to have any specific target organ general toxicity repeat exposure effects.

## Aspiration Respiratory Organs Hazard

The major health threat of ingestion occurs from the danger of aspiration (breathing) of liquid drops into the lungs, particularly from vomiting. Aspiration may result in chemical pneumonia (fluid in the lungs), severe lung damage, respiratory failure and even death.

# * * * Section 12 - Ecological Information * * *

## Ecotoxicity

### A: General Product Information

Keep out of sewers, drainage areas and waterways. Report spills and releases, as applicable, under Federal and State regulations.

### B: Component Analysis - Ecotoxicity - Aquatic Toxicity

**Fuels, diesel, no. 2 (68476-34-6)**

| Test & Species | | Conditions |
|---|---|---|
| 96 Hr LC50 Pimephales promelas | 35 mg/L [flow-through] | |

**Naphthalene (91-20-3)**

| Test & Species | | Conditions |
|---|---|---|
| 96 Hr LC50 Pimephales promelas | 5.74-6.44 mg/L [flow-through] | |
| 96 Hr LC50 Oncorhynchus mykiss | 1.6 mg/L [flow-through] | |
| 96 Hr LC50 Oncorhynchus mykiss | 0.91-2.82 mg/L [static] | |
| 96 Hr LC50 Pimephales promelas | 1.99 mg/L [static] | |

| | |
|---|---|
| 96 Hr LC50 Lepomis macrochirus | 31.0265 mg/L [static] |
| 72 Hr EC50 Skeletonema costatum | 0.4 mg/L |
| 48 Hr LC50 Daphnia magna | 2.16 mg/L |
| 48 Hr EC50 Daphnia magna | 1.96 mg/L [Flow through] |
| 48 Hr EC50 Daphnia magna | 1.09 - 3.4 mg/L [Static] |

### Persistence/Degradability
No information available.

### Bioaccumulation
No information available.

### Mobility in Soil
No information available.

## * * * Section 13 - Disposal Considerations * * *

### Waste Disposal Instructions
See Section 7 for Handling Procedures. See Section 8 for Personal Protective Equipment recommendations.

### Disposal of Contaminated Containers or Packaging
Dispose of contents/container in accordance with local/regional/national/international regulations.

## * * * Section 14 - Transportation Information * * *

### DOT Information
**Shipping Name:** Diesel Fuel
**NA #:** 1993 **Hazard Class:** 3 **Packing Group:** III
**Placard:**




## * * * Section 15 - Regulatory Information * * *

### Regulatory Information

**Component Analysis**

This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65) and/or CERCLA (40 CFR 302.4).

**Naphthalene (91-20-3)**

CERCLA: 100 lb final RQ; 45.4 kg final RQ

**SARA Section 311/312 – Hazard Classes**

| Acute Health | Chronic Health | Fire | Sudden Release of Pressure | Reactive |
|---|---|---|---|---|
| X | X | X | -- | -- |

**SARA SECTION 313 - SUPPLIER NOTIFICATION**

This product may contain listed chemicals below the de minimis levels which therefore are not subject to the supplier notification requirements of Section 313 of the Emergency Planning and Community Right- To-Know Act (EPCRA) of 1986 and of 40 CFR 372. If you may be required to report releases of chemicals listed in 40 CFR 372.28, you may contact Hess Corporate Safety if you require additional information regarding this product.

**State Regulations**

**Component Analysis - State**

The following components appear on one or more of the following state hazardous substances lists:

| Component | CAS | CA | MA | MN | NJ | PA | RI |
|---|---|---|---|---|---|---|---|
| Fuels, diesel, no. 2 | 68476-34-6 | No | No | No | Yes | No | No |
| Naphthalene | 91-20-3 | Yes | Yes | Yes | Yes | Yes | No |

The following statement(s) are provided under the California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65):

WARNING! This product contains a chemical known to the state of California to cause cancer.

**Component Analysis - WHMIS IDL**

No components are listed in the WHMIS IDL.

**Additional Regulatory Information**

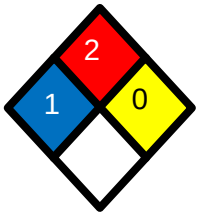
**Component Analysis - Inventory**

| Component | CAS # | TSCA | CAN | EEC |
|---|---|---|---|---|
| Fuels, diesel, no. 2 | 68476-34-6 | Yes | DSL | EINECS |
| Naphthalene | 91-20-3 | Yes | DSL | EINECS |

## * * * Section 16 - Other Information * * *

**NFPA® Hazard Rating**

| | |
|---|---|
| Health | 1 |
| Fire | 2 |
| Reactivity | 0 |




**HMIS® Hazard Rating**

| | | |
|---|---|---|
| Health | 1* | Slight |
| Fire | 2 | Moderate |
| Physical | 0 | Minimal |
| | | *Chronic |

## Key/Legend

ACGIH = American Conference of Governmental Industrial Hygienists; ADG = Australian Code for the Transport of Dangerous Goods by Road and Rail; ADR/RID = European Agreement of Dangerous Goods by Road/Rail; AS = Standards Australia; DFG = Deutsche Forschungsgemeinschaft; DOT = Department of Transportation; DSL = Domestic Substances List; EEC = European Economic Community; EINECS = European Inventory of Existing Commercial Chemical Substances; ELINCS = European List of Notified Chemical Substances; EU = European Union; HMIS = Hazardous Materials Identification System; IARC = International Agency for Research on Cancer; IMO = International Maritime Organization; IATA = International Air Transport Association; MAK = Maximum Concentration Value in the Workplace; NDSL = Non-Domestic Substances List; NFPA = National Fire Protection Association; NOHSC = National Occupational Health & Safety Commission; NTP = National Toxicology Program; STEL = Short-term Exposure Limit; TDG = Transportation of Dangerous Goods; TLV = Threshold Limit Value; TSCA = Toxic Substances Control Act; TWA = Time Weighted Average

## Literature References

None

## Other Information

Information presented herein has been compiled from sources considered to be dependable, and is accurate and reliable to the best of our knowledge and belief, but is not guaranteed to be so. Since conditions of use are beyond our control, we make no warranties, expressed or implied, except those that may be contained in our written contract of sale or acknowledgment.

Vendor assumes no responsibility for injury to vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Additionally, vendor assumes no responsibility for injury to vendee or third persons proximately caused by abnormal use of the material, even if reasonable safety procedures are followed. Furthermore, vendee assumes the risk in their use of the material.

End of Sheet

# Octanes

## Safety Data Sheet P-6239

according to U.S. Code of Federal Regulations 29 CFR 1910.1200, Hazard Communication.

Date of issue: 01/01/2000 Revision date: 01/27/2015 Supersedes: 12/01/2009

## SECTION: 1. Product and company identification

### 1.1. Product identifier

| | | |
|---|---|---|
| Product form | : | Substance |
| Name | : | Octanes |
| CAS No | : | 111-65-9 |
| Formula | : | C8H18 |
| Other means of identification | : | n-Octane, normal octane |

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

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

### 1.3. Details of the supplier of the safety data sheet

Praxair, Inc.
39 Old Ridgebury Road
Danbury, CT 06810-5113 - USA
T 1-800-772-9247 (1-800-PRAXAIR) - F 1-716-879-2146
www.praxair.com

### 1.4. Emergency telephone number

| | | |
|---|---|---|
| Emergency number | : | Onsite Emergency: 1-800-645-4633<br><br>CHEMTREC, 24hr/day 7days/week — Within USA: 1-800-424-9300, Outside USA: 001-703-527-3887 (collect calls accepted, Contract 17729) |

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

**Classification (GHS-US)**

| | |
|---|---|
| Flam. Liq. 2 | H225 |
| Skin Irrit. 2 | H315 |
| STOT SE 3 | H336 |
| Asp. Tox. 1 | H304 |
| Aquatic Acute 1 | H400 |
| Aquatic Chronic 1 | H410 |

Full text of H-phrases: see section 16

### 2.2. Label elements

**GHS-US labeling**

Hazard pictograms (GHS-US) :



GHS02 GHS07 GHS08 GHS09

Signal word (GHS-US) : DANGER

Hazard statements (GHS-US) :
H225 - HIGHLY FLAMMABLE LIQUID AND VAPOR
H304 - MAY BE FATAL IF SWALLOWED AND ENTERS AIRWAYS
H315 - CAUSES SKIN IRRITATION
H336 - MAY CAUSE DROWSINESS OR DIZZINESS
H400 - VERY TOXIC TO AQUATIC LIFE
H410 - VERY TOXIC TO AQUATIC LIFE WITH LONG LASTING EFFECTS

Precautionary statements (GHS-US) :
P210 - Keep away from heat, Open flames, sparks, hot surfaces. - No smoking
P233 - Keep container tightly closed.
P240 - Ground/bond container and receiving equipment
P241 - Use explosion-proof electrical, lighting, ventilating equipment
P242 - Use only non-sparking tools.
P243 - Take precautionary measures against static discharge



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P261 - Avoid breathing vapors
P264 - Wash hands, forearms and face thoroughly after handling
P271 - Use only outdoors or in a well-ventilated area
P273 - Avoid release to the environment.
P280 - Wear face shield, protective clothing, protective gloves, eye protection
P301+P310 - If swallowed: Immediately call a doctor
P302+P352 - If on skin: Wash with plenty of soap, water
P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing.
P312 - Call a doctor if you feel unwell
P321 - Specific treatment (see First aid measures on this label)
P331 - Do NOT induce vomiting
P332+P313 - If skin irritation occurs: Get medical advice/attention
P362 - Take off contaminated clothing and wash before reuse
P370+P378 - In case of fire: Use Carbon dioxide, Dry chemical, Water spray or fog to extinguish
P391 - Collect spillage
P403+P233 - Store in a well-ventilated place. Keep container tightly closed
P403+P235 - Store in a well-ventilated place. Keep cool
P405 - Store locked up
P501 - Dispose of contents/container in accordance with container supplier/owner instructions

### 2.3. Other hazards

No additional information available

### 2.4. Unknown acute toxicity (GHS-US)

No data available

## SECTION 3: Composition/information on ingredients

### 3.1. Substance

| Name | Product identifier | % |
|---|---|---|
| Octanes (Main constituent) | (CAS No) 111-65-9 | 100 |

### 3.2. Mixture

Not applicable

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

First-aid measures after inhalation : Immediately remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, qualified personnel may give oxygen. Call a physician.

First-aid measures after skin contact : In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician. Wash clothing before reuse. Discard contaminated shoes.

First-aid measures after eye contact : Immediately call a poison center or doctor/physician. Hold the eyelids open and away from the eyeballs to ensure that all surfaces are flushed thoroughly. Contact an ophthalmologist immediately.

First-aid measures after ingestion : Immediately call a poison center or doctor/physician. Do not induce vomiting.

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

Symptoms/injuries after inhalation : MAY CAUSE DROWSINESS OR DIZZINESS.

Symptoms/injuries after skin contact : CAUSES SKIN IRRITATION.

Symptoms/injuries after ingestion : MAY BE FATAL IF SWALLOWED AND ENTERS AIRWAYS.

### 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 : Carbon dioxide, Dry chemical, Water spray or fog.



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### 5.2. Special hazards arising from the substance or mixture

Fire hazard : HIGHLY FLAMMABLE LIQUID AND VAPOR.

Explosion hazard : May form flammable/explosive vapor-air mixture.

### 5.3. Advice for firefighters

Firefighting instructions : DANGER! FLAMMABLE LIQUID AND VAPOR Evacuate all personnel from danger area. Use self-contained breathing apparatus. Immediately cool surrounding containers with water spray from maximum distance, taking care not to extinguish flames. Avoid spreading burning liquid with water. Remove ignition sources if safe to do so. If flames are accidentally extinguished, explosive reignition may occur. Reduce vapors with water spray or fog. Stop flow of liquid if safe to do so, while continuing cooling water spray. Remove all containers from area of fire if safe to do so. Allow fire to burn out. On-site fire brigades must comply with OSHA 29 CFR 1910.156 and applicable standards under 29 CFR 1919 Subpart L - Fire Protection.

Other information : Vapor forms explosive mixtures with air and oxidizing agents. If leaking gas catches fire, do not extinguish flames. Flammable and toxic vapors may spread from leak and could explode if reignited by sparks or flames. Vapors are heavier than air and may collect in low spots. Explosive atmospheres may linger. Before entering area, especially confined areas, check with an appropriate device.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

General measures : Evacuate personnel to a safe area. Appropriate self-contained breathing apparatus may be required. Approach suspected leak area with caution. Remove all sources of ignition. Vapor can spread from spill. Contact with flammable materials may cause fire or explosion. Ventilate area or move container to a well-ventilated area. Before entering the area, especially a confined area, check the atmosphere with an appropriate device.

#### 6.1.1. For non-emergency personnel

No additional information available

#### 6.1.2. For emergency responders

Protective equipment : Avoid breathing dust/fume/gas/mist/vapors/spray.

### 6.2. Environmental precautions

Avoid release to the environment. Prevent waste from contaminating the surrounding environment. Prevent soil and water pollution. Dispose of contents/container in accordance with local/regional/national/international regulations. Contact supplier for any special requirements.

### 6.3. Methods and material for containment and cleaning up

For containment : On land, sweep or shovel into suitable containers.

### 6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Additional hazards when processed : Handle empty containers with care because residual vapors are flammable.

Precautions for safe handling : May irritate skin, eyes, and respiratory tract. Use only with adequate ventilation or respiratory protection. Do not get liquid or vapor in eyes, on skin, or on clothing. Have safety showers and eyewash fountains immediately available. May form explosive mixtures with air. Keep away from heat, sparks, and open flame. Use only spark-proof tools and explosion-proof equipment. Protect containers from damage. Use a suitable hand truck to move containers; do not drag, roll, slide, or drop. For other precautions in using this product, see section 16.

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use only non-sparking tools. Use only explosion-proof equipment.



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### 7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep container tightly closed.

Store only where temperature will not exceed 125°F (52°C). Post “No Smoking or Open Flames” signs in storage and use areas. There must be no sources of ignition. Separate packages and protect against potential fire and/or explosion damage following appropriate codes and requirements (e.g., NFPA 30, NFPA 55, NFPA 70, and/or NFPA 221 in the U.S.) or according to requirements determined by the Authority Having Jurisdiction (AHJ). Always secure containers upright to keep them from falling or being knocked over. Install valve protection cap, if provided, firmly in place by hand when the container is not in use. Store full and empty containers separately. Use a first-in, first-out inventory system to prevent storing full containers for long periods. For other precautions in using this product, see section 16.

Conditions to avoid : Sources of ignition. Heat sources.

### 7.3. Specific end use(s)

No additional information available

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

| Octanes (111-65-9) | | |
|---|---|---|
| ACGIH | ACGIH TLV-TWA (ppm) | 300 ppm |
| USA OSHA | OSHA PEL (TWA) (mg/m³) | 2350 mg/m³ |
| USA OSHA | OSHA PEL (TWA) (ppm) | 500 ppm |

### 8.2. Exposure controls

Personal protective equipment : Avoid all unnecessary exposure.

Hand protection : Wear protective gloves.

Eye protection : Chemical goggles or safety glasses.

Respiratory protection : Wear respiratory protection.

Other information : Do not eat, drink or smoke during use.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state : Liquid

Appearance : Colorless liquid.

Molecular mass : 114.22 g/mol

Color : Colorless

Odor : gasoline-like

Odor threshold : No data available

pH : No data available

Relative evaporation rate (butyl acetate=1) : 1.4

Melting point : -56.7 °C

Freezing point : No data available

Boiling point : 125 °C

Flash point : 13 °C

Critical temperature : 295.6 °C

Auto-ignition temperature : 206 °C

Decomposition temperature : No data available

Flammability (solid, gas) : 1 - 6.5 vol %

Vapor pressure : 10.45 mm Hg (at 20 °C)

Relative vapor density at 20 °C : No data available

Relative density : 0.7



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| | | |
|---|---|---|
| Relative density of saturated gas/air mixture | : | 3.86 |
| Specific gravity / density | : | 0.7036 g/cm³ (at 20 °C) |
| Solubility | : | Water: |
| Log Pow | : | 5.18 |
| Log Kow | : | No data available |
| Viscosity, kinematic | : | No data available |
| Viscosity, dynamic | : | No data available |
| Explosive properties | : | No data available |
| Oxidizing properties | : | No data available |
| Explosive limits | : | 0.91 - 5.8 vol % |

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

No additional information available

### 10.2. Chemical stability

HIGHLY FLAMMABLE LIQUID AND VAPOR. May form flammable/explosive vapor-air mixture.

### 10.3. Possibility of hazardous reactions

Not established.

### 10.4. Conditions to avoid

Extremely high or low temperatures. Open flame.

### 10.5. Incompatible materials

No additional information available

### 10.6. Hazardous decomposition products

May release flammable gases.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity : Not classified

| **Octanes ( \f )111-65-9** | |
|---|---|
| LC50 inhalation rat (mg/l) | 118 g/m³ (Exposure time: 4 h) |
| ATE US (vapors) | 118.000 mg/l/4h |
| ATE US (dust, mist) | 118.000 mg/l/4h |

| | | |
|---|---|---|
| Skin corrosion/irritation | : | CAUSES SKIN IRRITATION. |
| Serious eye damage/irritation | : | Not classified |
| Respiratory or skin sensitization | : | Not classified |
| Germ cell mutagenicity | : | Not classified |
| Carcinogenicity | : | Not classified |
| Reproductive toxicity | : | Not classified |
| Specific target organ toxicity (single exposure) | : | MAY CAUSE DROWSINESS OR DIZZINESS. |
| Specific target organ toxicity (repeated exposure) | : | Not classified |
| Aspiration hazard | : | MAY BE FATAL IF SWALLOWED AND ENTERS AIRWAYS. |
| Symptoms/injuries after inhalation | : | MAY CAUSE DROWSINESS OR DIZZINESS. |
| Symptoms/injuries after skin contact | : | CAUSES SKIN IRRITATION. |
| Symptoms/injuries after ingestion | : | MAY BE FATAL IF SWALLOWED AND ENTERS AIRWAYS. |



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## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - water : VERY TOXIC TO AQUATIC LIFE WITH LONG LASTING EFFECTS.

| Octanes (111-65-9) | |
|---|---|
| EC50 Daphnia 1 | 0.38 mg/l (Exposure time: 48 h - Species: water flea) |

### 12.2. Persistence and degradability

| Octanes (111-65-9) | |
|---|---|
| Persistence and degradability | Not established. |

### 12.3. Bioaccumulative potential

| Octanes (111-65-9) | |
|---|---|
| Log Pow | 5.18 |
| Bioaccumulative potential | Not established. |

### 12.4. Mobility in soil

No additional information available

### 12.5. Other adverse effects

Effect on ozone layer :

Other information : Avoid release to the environment.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

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

Additional information : Handle empty containers with care because residual vapors are flammable.

Ecology - waste materials : Avoid release to the environment.

## SECTION 14: Transport information

In accordance with DOT

Transport document description : UN1262 Octanes, 3, II

UN-No.(DOT) : UN1262

Proper Shipping Name (DOT) : Octanes

Department of Transportation (DOT) Hazard Classes : 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120

Hazard labels (DOT) : 3 - Flammable liquid




Packing group (DOT) : II - Medium Danger

DOT Special Provisions (49 CFR 172.102) : IB2 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized.
T4 - 2.65 178.274(d)(2) Normal..... 178.275(d)(3)
TP1 - The maximum degree of filling must not exceed the degree of filling determined by the following: Degree of filling = 97 / 1 + a (tr - tf) Where: tr is the maximum mean bulk temperature during transport, and tf is the temperature in degrees celsius of the liquid during filling.

### Additional information

Other information : No supplementary information available.



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### Transport by sea

| | | |
|---|---|---|
| UN-No. (IMDG) | : | 1262 |
| Proper Shipping Name (IMDG) | : | OCTANES |
| Class (IMDG) | : | 3 - Flammable liquids |
| Packing group (IMDG) | : | II - substances presenting medium danger |

### Air transport

| | | |
|---|---|---|
| UN-No.(IATA) | : | 1262 |
| Proper Shipping Name (IATA) | : | Octanes |
| Class (IATA) | : | 3 - Flammable Liquids |
| Packing group (IATA) | : | II - Medium Danger |

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

| **Octanes (111-65-9)** | |
|---|---|
| Listed on the United States TSCA (Toxic Substances Control Act) inventory | |
| SARA Section 311/312 Hazard Classes | Immediate (acute) health hazard<br>Fire hazard |

### 15.2. International regulations

#### CANADA

| **Octanes (111-65-9)** |
|---|
| Listed on the Canadian DSL (Domestic Substances List) |

#### EU-Regulations

| **Octanes (111-65-9)** |
|---|
| Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances) |

#### Classification according to Regulation (EC) No. 1272/2008 [CLP]

| | |
|---|---|
| Flam. Liq. 2 | H225 |
| Skin Irrit. 2 | H315 |
| STOT SE 3 | H336 |
| Asp. Tox. 1 | H304 |
| Aquatic Acute 1 | H400 |
| Aquatic Chronic 1 | H410 |

Full text of H-phrases: see section 16

#### 15.2.2. National regulations

| **Octanes (111-65-9)** |
|---|
| Listed on the AICS (Australian Inventory of Chemical Substances)<br>Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)<br>Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory<br>Listed on the Korean ECL (Existing Chemicals List)<br>Listed on NZIoC (New Zealand Inventory of Chemicals)<br>Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)<br>Listed on the Canadian IDL (Ingredient Disclosure List) |

### 15.3. US State regulations

| **Octanes(111-65-9)** | |
|---|---|
| U.S. - California - Proposition 65 - Carcinogens List | No |
| U.S. - California - Proposition 65 - Developmental Toxicity | No |
| U.S. - California - Proposition 65 - Reproductive | No |



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| Octanes(111-65-9) | |
|---|---|
| Toxicity - Female | |
| U.S. - California - Proposition 65 - Reproductive Toxicity - Male | No |
| State or local regulations | U.S. - Massachusetts - Right To Know List<br>U.S. - New Jersey - Right to Know Hazardous Substance List<br>U.S. - Pennsylvania - RTK (Right to Know) List |

## SECTION 16: Other information

Revision date : 1/27/2015 12:00:00 AM

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

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

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

Praxair SDSs are furnished on sale or delivery by Praxair or the independent distributors and suppliers who package and sell our products. To obtain current SDSs for these products, contact your Praxair sales representative, local distributor, or supplier, or download from www.praxair.com. If you have questions regarding Praxair SDSs, would like the document number and date of the latest SDS, or would like the names of the Praxair suppliers in your area, phone or write the Praxair Call Center (Phone: 1-800-PRAXAIR/1-800-772-9247; Address: Praxair Call Center, Praxair, Inc., P.O. Box 44, Tonawanda, NY 14151-0044).

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Full text of H-phrases:

| | |
|---|---|
| Aquatic Acute 1 | Hazardous to the aquatic environment - Acute Hazard Category 1 |
| Aquatic Chronic 1 | Hazardous to the aquatic environment - Chronic Hazard Category 1 |
| Asp. Tox. 1 | Aspiration hazard Category 1 |
| Flam. Liq. 2 | Flammable liquids Category 2 |
| Skin Irrit. 2 | Skin corrosion/irritation Category 2 |
| STOT SE 3 | Specific target organ toxicity (single exposure) Category 3 |
| H225 | HIGHLY FLAMMABLE LIQUID AND VAPOR |
| H304 | MAY BE FATAL IF SWALLOWED AND ENTERS AIRWAYS |
| H315 | CAUSES SKIN IRRITATION |
| H336 | MAY CAUSE DROWSINESS OR DIZZINESS |
| H400 | VERY TOXIC TO AQUATIC LIFE |
| H410 | VERY TOXIC TO AQUATIC LIFE WITH LONG LASTING EFFECTS |



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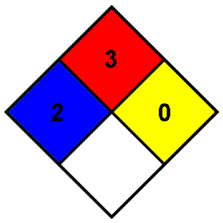
| | | |
|---|---|---|
| NFPA health hazard | : | 2 - Intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical attention is given. |
| NFPA fire hazard | : | 3 - Liquids and solids that can be ignited under almost all ambient conditions. |
| NFPA reactivity | : | 0 - Normally stable, even under fire exposure conditions, and are not reactive with water. |




**HMIS III Rating**

| | | |
|---|---|---|
| Health | : | 2 Moderate Hazard - Temporary or minor injury may occur |
| Flammability | : | 3 Serious Hazard |
| Physical | : | 1 Slight Hazard |

SDS US (GHS HazCom 2012) - Praxair

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



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# Acetylene, dissolved

Safety Data Sheet P-4559

according to U.S. Code of Federal Regulations 29 CFR 1910.1200, Hazard Communication.

Date of issue: 01/01/1979 Revision date: 01/12/2015 Supersedes: 07/01/2014

## SECTION: 1. Product and company identification

### 1.1. Product identifier

| | | |
|---|---|---|
| Product form | : | Substance |
| Name | : | Acetylene, dissolved |
| CAS No | : | 74-86-2 |
| Formula | : | C2H2 |
| Other means of identification | : | Acetylen, ethine, ethyne, narcylene |

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

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

### 1.3. Details of the supplier of the safety data sheet

Praxair, Inc.
39 Old Ridgebury Road
Danbury, CT 06810-5113 - USA
T 1-800-772-9247 (1-800-PRAXAIR) - F 1-716-879-2146
www.praxair.com

### 1.4. Emergency telephone number

| | | |
|---|---|---|
| Emergency number | : | Onsite Emergency: 1-800-645-4633<br><br>CHEMTREC, 24hr/day 7days/week — Within USA: 1-800-424-9300, Outside USA: 001-703-527-3887 (collect calls accepted, Contract 17729) |

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

**Classification (GHS-US)**

Flam. Gas 1 H220
Dissolved gas H280

Full text of H-phrases: see section 16

### 2.2. Label elements

**GHS-US labeling**

Hazard pictograms (GHS-US) :



GHS02 GHS04

Signal word (GHS-US) : Danger

Hazard statements (GHS-US) :
H220 - EXTREMELY FLAMMABLE GAS
H231 - MAY REACT EXPLOSIVELY EVEN IN THE ABSENCE OF AIR AT ELEVATED PRESSURE AND/OR TEMPERATURE
H280 - CONTAINS GAS UNDER PRESSURE; MAY EXPLODE IF HEATED
OSHA-H01 - MAY DISPLACE OXYGEN AND CAUSE RAPID SUFFOCATION.
CGA-HG04 - MAY FORM EXPLOSIVE MIXTURES WITH AIR

Precautionary statements (GHS-US) :
P202 - Do not handle until all safety precautions have been read and understood
P210 - Keep away from heat, Open flames, sparks, hot surfaces. - No smoking
P271+P403 - Use and store only outdoors or in a well-ventilated place.
P377 - Leaking gas fire: Do not extinguish, unless leak can be stopped safely
P381 - Eliminate all ignition sources if safe to do so
P501 - Dispose of contents/container in accordance with container supplier/owner instructions
CGA-PG05 - Use a back flow preventive device in the piping.
CGA-PG13 - Fusible plugs in the top, bottom, or valve melt at 98°C to 107°C (208°F to 224°F). Do not discharge at pressures above 15 psig (103 kPa).
CGA-PG06 - Close valve after each use and when empty.



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CGA-PG11 - Never put cylinders into unventilated areas of passenger vehicles.
CGA-PG02 - Protect from sunlight when ambient temperature exceeds 52°C (125°F).

### 2.3. Other hazards

Other hazards not contributing to the classification : For safety reasons, the acetylene is dissolved in acetone (CAS # 67-64-1; Flam. Liq. 2, Eye Irrit. 2, STOT SE 3) in the gas container. Vapor of the solvent is carried away as impurity when the acetylene is extracted from the gas container. The concentration of the solvent vapor in the gas is lower than the concentration limits to change the classification of the acetylene.

### 2.4. Unknown acute toxicity (GHS-US)

No data available

## SECTION 3: Composition/information on ingredients

### 3.1. Substance

| Name | Product identifier | % |
|---|---|---|
| Acetylene, dissolved (Main constituent) | (CAS No) 74-86-2 | 100 |

### 3.2. Mixture

Not applicable

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

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

First-aid measures after skin contact : For exposure to liquid, immediately warm frostbite area with warm water not to exceed 105°F (41°C). Water temperature should be tolerable to normal skin. Maintain skin warming for at least 15 minutes or until normal coloring and sensation have returned to the affected area. In case of massive exposure, remove clothing while showering with warm water. Seek medical evaluation and treatment as soon as possible.

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

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

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

No additional information available

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

Obtain medical assistance.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

Suitable extinguishing media : See below. See CGA Pamphlet SB-4, Handling Acetylene Cylinders in Fire Situations, for further information.

### 5.2. Special hazards arising from the substance or mixture

Fire hazard : EXTREMELY FLAMMABLE GAS. If venting or leaking gas catches fire, do not extinguish flames. Flammable vapors may spread from leak, creating an explosive reignition hazard. Vapors can be ignited by pilot lights, other flames, smoking, sparks, heaters, electrical equipment, static discharge, or other ignition sources at locations distant from product handling point. Explosive atmospheres may linger. Before entering an area, especially a confined area, check the atmosphere with an appropriate device.

Explosion hazard : EXTREMELY FLAMMABLE GAS. Forms explosive mixtures with air and oxidizing agents.

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



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### 5.3. Advice for firefighters

| | | |
|---|---|---|
| Firefighting instructions | : | Evacuate all personnel from the danger area. Use self-contained breathing apparatus (SCBA) and protective clothing. Immediately cool containers with water from maximum distance. Stop flow of gas if safe to do so, while continuing cooling water spray. Remove ignition sources if safe to do so. Remove containers from area of fire if safe to do so. On-site fire brigades must comply with OSHA 29 CFR 1910.156 and applicable standards under 29 CFR 1910 Subpart L—Fire Protection. |
| Protection during firefighting | : | Compressed gas: asphyxiant. Suffocation hazard by lack of oxygen. |
| Special protective equipment for fire fighters | : | Standard protective clothing and equipment (Self Contained Breathing Apparatus) for fire fighters. |
| Specific methods | : | Use fire control measures appropriate for the surrounding fire. Exposure to fire and heat radiation may cause gas containers to rupture. Cool endangered containers with water spray jet from a protected position. Prevent water used in emergency cases from entering sewers and drainage systems. Stop flow of product if safe to do so. Use water spray or fog to knock down fire fumes if possible. Continue water spray from protected position until container stays cool. |
| Other information | : | Acetylene containers are provided with pressure relief devices designed to vent contents when exposed to elevated temperature. |

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

General measures : Wear self-contained breathing apparatus when entering area unless atmosphere is proven to be safe. Evacuate area. Ensure adequate ventilation. Stop leak if safe to do so.

#### 6.1.1. For non-emergency personnel

No additional information available

#### 6.1.2. For emergency responders

No additional information available

### 6.2. Environmental precautions

Prevent waste from contaminating the surrounding environment. Prevent soil and water pollution. Dispose of contents/container in accordance with local/regional/national/international regulations. Contact supplier for any special requirements.

### 6.3. Methods and material for containment and cleaning up

No additional information available

### 6.4. Reference to other sections

See also sections 8 and 13.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Precautions for safe handling : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use only non-sparking tools. Use only explosion-proof equipment.

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



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### 7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store only where temperature will not exceed 125°F (52°C). Post "No Smoking or Open Flames" signs in storage and use areas. There must be no sources of ignition. Separate packages and protect against potential fire and/or explosion damage following appropriate codes and requirements (e.g., NFPA 30, NFPA 55, NFPA 70, and/or NFPA 221 in the U.S.) or according to requirements determined by the Authority Having Jurisdiction (AHJ). Always secure containers upright to keep them from falling or being knocked over. Install valve protection cap, if provided, firmly in place by hand when the container is not in use. Store full and empty containers separately. Use a first-in, first-out inventory system to prevent storing full containers for long periods. For other precautions in using this product, see section 16.

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

Storage area : Acetylene trailers are designed and intended for outdoor use. Acetylene storage in excess of 2.500 cu ft (70.79 cubic meters) is prohibited in buildings and other occupancies.

### 7.3. Specific end use(s)

None.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

| Acetylene, dissolved (74-86-2) | |
|---|---|
| ACGIH | Not established |
| USA OSHA | Not established |

### 8.2. Exposure controls

Appropriate engineering controls : An explosion-proof local exhaust system or a mechanical system is acceptable if it can prevent oxygen deficiency and keep hazardous fumes and gases below all applicable exposure limits in the worker's breathing area. During welding, ensure that there is adequate ventilation to keep worker exposure below applicable limits for fumes, gases, and other by-products of welding. Do not breathe fumes or gases. Short-term overexposure to fumes may cause dizziness, nausea, and dryness or irritation of the nose, throat, and eyes, or may cause other similar discomfort.

Eye protection : Wear safety glasses with side shields.

Skin and body protection : As needed for welding, wear hand, head, and body protection to help prevent injury from radiation and sparks. (See ANSI Z49.1.) At a minimum, this includes welder's gloves and protective goggles, and may include arm protectors, aprons, hats, and shoulder protection as well as substantial clothing.

Respiratory protection : When workplace conditions warrant respirator use, follow a respiratory protection program that meets OSHA 29 CFR 1910.134, ANSI Z88.2, or MSHA 30 CFR 72.710 (where applicable). Use an air-supplied or air-purifying cartridge if the action level is exceeded. Ensure that the respirator has the appropriate protection factor for the exposure level. If cartridge type respirators are used, the cartridge must be appropriate for the chemical exposure (e.g., an organic vapor cartridge). For emergencies or instances with unknown exposure levels, use a self-contained breathing apparatus (SCBA).

Thermal hazard protection : Wear cold insulating gloves when transfilling or breaking transfer connections.

Environmental exposure controls : Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for specific methods for waste gas treatment.

Other information : Consider the use of flame resistant anti-static safety clothing. Wear leather safety gloves and safety shoes when handling cylinders.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state : Gas



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| | | |
|---|---|---|
| Appearance | : | Colorless, odorless gas. |
| Molecular mass | : | 26 g/mol |
| Color | : | Colorless. |
| Odor | : | Garlic like. |
| Odor threshold | : | No data available |
| pH | : | Not applicable. |
| Relative evaporation rate (butyl acetate=1) | : | No data available |
| Relative evaporation rate (ether=1) | : | Not applicable. |
| Melting point | : | -80.8 °C |
| Freezing point | : | No data available |
| Boiling point | : | -84 °C |
| Flash point | : | No data available |
| Critical temperature | : | 36 °C |
| Auto-ignition temperature | : | 305 °C |
| Decomposition temperature | : | 635 °C |
| Flammability (solid, gas) | : | 2.5 - 100 vol % |
| Vapor pressure | : | 4400 kPa |
| Critical pressure | : | 6138 kPa |
| Relative vapor density at 20 °C | : | No data available |
| Relative density | : | Not applicable. |
| Specific gravity / density | : | 0.0012 g/cm³ (at 0 °C) |
| Relative gas density | : | 0.9 |
| Solubility | : | Water: 1185 mg/l |
| Log Pow | : | 0.37 |
| Log Kow | : | Not applicable. |
| Viscosity, kinematic | : | Not applicable. |
| Viscosity, dynamic | : | Not applicable. |
| Explosive properties | : | Not applicable. |
| Oxidizing properties | : | None. |
| Explosive limits | : | No data available |

### 9.2. Other information

| | | |
|---|---|---|
| Sublimation point | : | -83.3 °C |
| Gas group | : | Dissolved gas |

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

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

### 10.2. Chemical stability

Dissolved in a solvent supported in a porous mass. Stable under recommended handling and storage conditions (see section 7).

### 10.3. Possibility of hazardous reactions

May react explosively even in the absence of air. May decompose violently at high temperature and/or pressure or in the presence of a catalyst. Can form explosive mixture with air. May react violently with oxidants.

### 10.4. Conditions to avoid

High temperature. High pressure. Keep away from heat/sparks/open flames/hot surfaces. – No smoking.

### 10.5. Incompatible materials

Forms explosive acetylides with copper, silver and mercury. Do not use alloys containing more than 65% copper. Air, Oxidizer. Do not use alloys containing more than 43% silver.



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### 10.6. Hazardous decomposition products

Thermal decomposition or burning may produce carbon monoxide, carbon dioxide, and hydrogen. The welding and cutting process may form reaction products such as carbon monoxide and carbon dioxide. Other decomposition products of normal operation originate from the volatilization, reaction, or oxidation of the material being worked.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity : Not classified

Skin corrosion/irritation : Not classified

pH: Not applicable.

Serious eye damage/irritation : Not classified

pH: Not applicable.

Respiratory or skin sensitization : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : Not classified

No known effects from this product.

Aspiration hazard : Not classified

Not applicable.

## SECTION 12: Ecological information

### 12.1. Toxicity

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

### 12.2. Persistence and degradability

| Acetylene, dissolved (74-86-2) | |
|---|---|
| Persistence and degradability | Will rapidly degrade by indirect photolysis in air. Will not undergo hydrolysis. |

### 12.3. Bioaccumulative potential

| Acetylene, dissolved (74-86-2) | |
|---|---|
| Log Pow | 0.37 |
| Log Kow | Not applicable. |
| Bioaccumulative potential | Not expected to bioaccumulate due to the low log Kow (log Kow < 4). Refer to section 9. |

### 12.4. Mobility in soil

| Acetylene, dissolved (74-86-2) | |
|---|---|
| Mobility in soil | No data available. |
| Ecology - soil | Because of its high volatility, the product is unlikely to cause ground or water pollution. |

### 12.5. Other adverse effects

Effect on ozone layer : No known effects from this product.

Effect on the global warming : No known effects from this product.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

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



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## SECTION 14: Transport information

In accordance with DOT

Transport document description : UN1001 Acetylene, dissolved

UN-No.(DOT) : UN1001

Proper Shipping Name (DOT) : Acetylene, dissolved

Hazard labels (DOT) : 2.1 - Flammable gas




DOT Special Provisions (49 CFR 172.102) : N86 - UN pressure receptacles made of aluminum alloy are not authorized.
N88 - Any metal part of a UN pressure receptacle in contact with the contents may not contain more than 65% copper, with a tolerance of 1%.

### Additional information

Emergency Response Guide (ERG) Number : 116 (UN1001)

Other information : No supplementary information available.

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

### Transport by sea

UN-No. (IMDG) : 1001

Proper Shipping Name (IMDG) : Acetylene, dissolved

Class (IMDG) : 2 - Gases

MFAG-No : 116

### Air transport

UN-No.(IATA) : 1001

Proper Shipping Name (IATA) : Acetylene, dissolved

Class (IATA) : 2

Civil Aeronautics Law : Gases under pressure/Gases flammable under pressure

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

| **Acetylene, dissolved (74-86-2)** | |
|---|---|
| Listed on the United States TSCA (Toxic Substances Control Act) inventory | |
| SARA Section 311/312 Hazard Classes | Sudden release of pressure hazard<br>Reactive hazard<br>Fire hazard |

### 15.2. International regulations

#### CANADA

| **Acetylene, dissolved (74-86-2)** | |
|---|---|
| Listed on the Canadian DSL (Domestic Substances List) | |
| WHMIS Classification | Class A - Compressed Gas<br>Class B Division 1 - Flammable Gas<br>Class F - Dangerously Reactive Material |



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### EU-Regulations

| Acetylene, dissolved (74-86-2) |
|---|
| Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances) |

**Classification according to Regulation (EC) No. 1272/2008 [CLP]**
Flam. Gas 1 H220
Dissolved gas H280

Full text of H-phrases: see section 16

### 15.2.2. National regulations

| Acetylene, dissolved (74-86-2) |
|---|
| Listed on the AICS (Australian Inventory of Chemical Substances)<br>Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)<br>Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory<br>Listed on the Korean ECL (Existing Chemicals List)<br>Listed on NZIoC (New Zealand Inventory of Chemicals)<br>Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances) |

### 15.3. US State regulations

| Acetylene, dissolved(74-86-2) | |
|---|---|
| U.S. - California - Proposition 65 - Carcinogens List | No |
| U.S. - California - Proposition 65 - Developmental Toxicity | No |
| U.S. - California - Proposition 65 - Reproductive Toxicity - Female | No |
| U.S. - California - Proposition 65 - Reproductive Toxicity - Male | No |
| State or local regulations | U.S. - Massachusetts - Right To Know List<br>U.S. - New Jersey - Right to Know Hazardous Substance List<br>U.S. - Pennsylvania - RTK (Right to Know) List |

## SECTION 16: Other information

Revision date : 1/12/2015 12:00:00 AM



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Other information : When using this product in welding and cutting, read and understand the manufacturer's instructions and the precautionary label on the product. Ask your welding products supplier for a copy of Praxair's free safety booklet, P-2035, Precautions and Safe Practices for Gas Welding, Cutting, and Heating, and for other manufacturers' safety publications. For a detailed treatment, get ANSI Z49.1, Safety in Welding, Cutting, and Allied Processes, published by the American Welding Society (AWS), www.aws.org. Order AWS documents from Global Engineering Documents, global.ihs.com. Arcs and sparks can ignite combustible materials. Prevent fires. Refer to NFPA 51B, Standard for Fire Prevention During Welding, Cutting, and Other Hotwork. Do not strike an arc on the container. The defect produced by an arc burn may lead to container rupture.

Fumes and gases produced during welding and cutting processes can be dangerous to your health and may cause serious lung disease. KEEP YOUR HEAD OUT OF FUMES. DO NOT BREATHE FUMES AND GASES. Use enough ventilation, local exhaust, or both to keep fumes and gases from your breathing zone and the general area. Short-term overexposure to fumes may cause dizziness, nausea, and dryness or irritation of the nose, throat, and eyes; or may cause other similar discomfort. Contaminants in the air may add to the hazard of fumes and gases.

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

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

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

Praxair SDSs are furnished on sale or delivery by Praxair or the independent distributors and suppliers who package and sell our products. To obtain current SDSs for these products, contact your Praxair sales representative, local distributor, or supplier, or download from www.praxair.com. If you have questions regarding Praxair SDSs, would like the document number and date of the latest SDS, or would like the names of the Praxair suppliers in your area, phone or write the Praxair Call Center (Phone: 1-800-PRAXAIR/1-800-772-9247; Address: Praxair Call Center, Praxair, Inc., P.O. Box 44, Tonawanda, NY 14151-0044).

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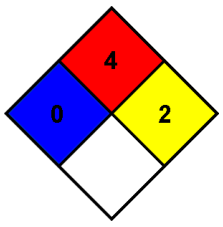
Full text of H-phrases:

| | |
|---|---|
| Dissolved gas | Gases under pressure Dissolved gas |
| Flam. Gas 1 | Flammable gases Category 1 |
| H220 | EXTREMELY FLAMMABLE GAS |
| H280 | CONTAINS GAS UNDER PRESSURE; MAY EXPLODE IF HEATED |

NFPA health hazard : 0 - Exposure under fire conditions would offer no hazard beyond that of ordinary combustible materials.

NFPA fire hazard : 4 - Will rapidly or completely vaporize at normal pressure and temperature, or is readily dispersed in air and will burn readily.

NFPA reactivity : 2 - Normally unstable and readily undergo violent decomposition but do not detonate. Also: may react violently with water or may form potentially explosive mixtures with water.



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## HMIS III Rating

| | |
|---|---|
| Health | : 2 Moderate Hazard - Temporary or minor injury may occur |
| Flammability | : 4 Severe Hazard |
| Physical | : 2 Moderate Hazard |

SDS US (GHS HazCom 2012) - Praxair

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



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# Propane

Safety Data Sheet P-4646

according to U.S. Code of Federal Regulations 29 CFR 1910.1200, Hazard Communication.

Date of issue: 01/01/1984 Revision date: 04/08/2015 Supersedes: 01/13/2015

## SECTION: 1. Product and company identification

### 1.1. Product identifier

| | | |
|---|---|---|
| Product form | : | Substance |
| Name | : | Propane |
| CAS No | : | 74-98-6 |
| Formula | : | C3H8 |
| Other means of identification | : | Propane, Liquefied Petroleum Gas, n-propane,dimethylmethane,propyl hydride, refrigerant gas R290 |

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

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

### 1.3. Details of the supplier of the safety data sheet

Praxair, Inc.
39 Old Ridgebury Road
Danbury, CT 06810-5113 - USA
T 1-800-772-9247 (1-800-PRAXAIR) - F 1-716-879-2146
www.praxair.com

### 1.4. Emergency telephone number

| | | |
|---|---|---|
| Emergency number | : | Onsite Emergency: 1-800-645-4633<br><br>CHEMTREC, 24hr/day 7days/week — Within USA: 1-800-424-9300, Outside USA: 001-703-527-3887 (collect calls accepted, Contract 17729) |

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

**Classification (GHS-US)**

Flam. Gas 1 H220
Liquefied gas H280

### 2.2. Label elements

**GHS-US labeling**

Hazard pictograms (GHS-US) :



GHS02 GHS04

Signal word (GHS-US) : DANGER

Hazard statements (GHS-US) :
H220 - EXTREMELY FLAMMABLE GAS
H280 - CONTAINS GAS UNDER PRESSURE; MAY EXPLODE IF HEATED
OSHA-H01 - MAY DISPLACE OXYGEN AND CAUSE RAPID SUFFOCATION.
CGA-HG04 - MAY FORM EXPLOSIVE MIXTURES WITH AIR
CGA-HG01 - MAY CAUSE FROSTBITE.

Precautionary statements (GHS-US) :
P202 - Do not handle until all safety precautions have been read and understood
P210 - Keep away from Heat, Open flames, Sparks, Hot surfaces. - No smoking
P271+P403 - Use and store only outdoors or in a well-ventilated place.
P377 - Leaking gas fire: Do not extinguish, unless leak can be stopped safely
P381 - Eliminate all ignition sources if safe to do so
CGA-PG05 - Use a back flow preventive device in the piping.
CGA-PG12 - Do not open valve until connected to equipment prepared for use.
CGA-PG06 - Close valve after each use and when empty.
CGA-PG11 - Never put cylinders into unventilated areas of passenger vehicles.
CGA-PG02 - Protect from sunlight when ambient temperature exceeds 52°C (125°F).



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### 2.3. Other hazards

Other hazards not contributing to the classification : Contact with liquid may cause cold burns/frostbite.

### 2.4. Unknown acute toxicity (GHS US)

No data available

## SECTION 3: Composition/information on ingredients

### 3.1. Substance

| Name | Product identifier | % |
|---|---|---|
| Propane (Main constituent) | (CAS No) 74-98-6 | 100 |

### 3.2. Mixture

Not applicable

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

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

First-aid measures after skin contact : The liquid may cause frostbite. For exposure to liquid, immediately warm frostbite area with warm water not to exceed 105°F (41°C). Water temperature should be tolerable to normal skin. Maintain skin warming for at least 15 minutes or until normal coloring and sensation have returned to the affected area. In case of massive exposure, remove clothing while showering with warm water. Seek medical evaluation and treatment as soon as possible.

.

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

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

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

No additional information available

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

None.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

Suitable extinguishing media : Carbon dioxide, dry chemical powder, water spray, fog.

### 5.2. Special hazards arising from the substance or mixture

Fire hazard : EXTREMELY FLAMMABLE GAS. If venting or leaking gas catches fire, do not extinguish flames. Flammable vapors may spread from leak, creating an explosive reignition hazard. Vapors can be ignited by pilot lights, other flames, smoking, sparks, heaters, electrical equipment, static discharge, or other ignition sources at locations distant from product handling point. Explosive atmospheres may linger. Before entering an area, especially a confined area, check the atmosphere with an appropriate device.

Explosion hazard : EXTREMELY FLAMMABLE GAS. Forms explosive mixtures with air and oxidizing agents.

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

### 5.3. Advice for firefighters

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

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

Special protective equipment for fire fighters : Standard protective clothing and equipment (Self Contained Breathing Apparatus) for fire fighters.



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| | | |
|---|---|---|
| Specific methods | : | Use fire control measures appropriate for the surrounding fire. Exposure to fire and heat radiation may cause gas containers to rupture. Cool endangered containers with water spray jet from a protected position. Prevent water used in emergency cases from entering sewers and drainage systems.<br><br>Stop flow of product if safe to do so.<br><br>Use water spray or fog to knock down fire fumes if possible. |
| Other information | : | Containers are equipped with a pressure relief device. (Exceptions may exist where authorized by DOT.). |

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

General measures : Wear self-contained breathing apparatus when entering area unless atmosphere is proven to be safe. Evacuate area. Ensure adequate air ventilation. Stop leak if safe to do so.

#### 6.1.1. For non-emergency personnel

No additional information available

#### 6.1.2. For emergency responders

No additional information available

### 6.2. Environmental precautions

Try to stop release.

### 6.3. Methods and material for containment and cleaning up

No additional information available

### 6.4. Reference to other sections

See also sections 8 and 13.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Precautions for safe handling : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use only non-sparking tools. Use only explosion-proof equipment.

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



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### 7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store only where temperature will not exceed 125°F (52°C). Post "No Smoking or Open Flames" signs in storage and use areas. There must be no sources of ignition. Separate packages and protect against potential fire and/or explosion damage following appropriate codes and requirements (e.g., NFPA 30, NFPA 55, NFPA 70, and/or NFPA 221 in the U.S.) or according to requirements determined by the Authority Having Jurisdiction (AHJ). Always secure containers upright to keep them from falling or being knocked over. Install valve protection cap, if provided, firmly in place by hand when the container is not in use. Store full and empty containers separately. Use a first-in, first-out inventory system to prevent storing full containers for long periods. For other precautions in using this product, see section 16.

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

### 7.3. Specific end use(s)

None.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

| **Propane (74-98-6)** | | |
|---|---|---|
| USA OSHA | OSHA PEL (TWA) (mg/m³) | 1800 mg/m³ |
| USA OSHA | OSHA PEL (TWA) (ppm) | 1000 ppm |
| ACGIH | Not established | |

### 8.2. Exposure controls

Appropriate engineering controls : An explosion-proof local exhaust system or a mechanical system is acceptable if it can prevent oxygen deficiency and keep hazardous fumes and gases below all applicable exposure limits in the worker's breathing area. During welding, ensure that there is adequate ventilation to keep worker exposure below applicable limits for fumes, gases, and other by-products of welding. Do not breathe fumes or gases. Short-term overexposure to fumes may cause dizziness, nausea, and dryness or irritation of the nose, throat, and eyes, or may cause other similar discomfort.

Eye protection : Wear safety glasses with side shields.

Skin and body protection : As needed for welding, wear hand, head, and body protection to help prevent injury from radiation and sparks. (See ANSI Z49.1.) At a minimum, this includes welder's gloves and protective goggles, and may include arm protectors, aprons, hats, and shoulder protection as well as substantial clothing.

Respiratory protection : When workplace conditions warrant respirator use, follow a respiratory protection program that meets OSHA 29 CFR 1910.134, ANSI Z88.2, or MSHA 30 CFR 72.710 (where applicable). Use an air-supplied or air-purifying cartridge if the action level is exceeded. Ensure that the respirator has the appropriate protection factor for the exposure level. If cartridge type respirators are used, the cartridge must be appropriate for the chemical exposure (e.g., an organic vapor cartridge). For emergencies or instances with unknown exposure levels, use a self-contained breathing apparatus (SCBA).

Thermal hazard protection : Wear cold insulating gloves when transfilling or breaking transfer connections.

Environmental exposure controls : Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for specific methods for waste gas treatment.

Other information : Consider the use of flame resistant anti-static safety clothing. Wear safety shoes while handling containers.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state : Gas



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| | | |
|---|---|---|
| Appearance | : | Colorless gas. |
| Molecular mass | : | 44 g/mol |
| Color | : | Colorless. |
| Odor | : | Poor warning properties at low concentrations. Stenchant often added. Sweetish. |
| Odor threshold | : | No data available |
| pH | : | Not applicable. |
| Relative evaporation rate (butyl acetate=1) | : | No data available |
| Relative evaporation rate (ether=1) | : | Not applicable. |
| Melting point | : | No data available |
| Freezing point | : | -187.69 °C (-305.8°F) |
| Boiling point | : | -42.04 °C (-44.32°F) |
| Flash point | : | -104 °C (-155.2°F) TCC |
| Critical temperature | : | 96.7 °C (206°F) |
| Auto-ignition temperature | : | 450 °C (842°F) |
| Decomposition temperature | : | No data available |
| Flammability (solid, gas) | : | 2.1 - 9.5 vol % |
| Vapor pressure | : | 8.58 bar (109.73 psig) |
| Relative vapor density at 20 °C | : | No data available |
| Relative density | : | 0.58 |
| Density | : | 0.506 - 0.583 g/cm³ (at 15 °C) |
| Relative gas density | : | 1.5 |
| Solubility | : | Water: 75 mg/l |
| Log Pow | : | 2.36 |
| Log Kow | : | Not applicable. |
| Viscosity, kinematic | : | Not applicable. |
| Viscosity, dynamic | : | Not applicable. |
| Explosive properties | : | Not applicable. |
| Oxidizing properties | : | None. |
| Explosion limits | : | No data available |

### 9.2. Other information

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

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

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

### 10.2. Chemical stability

Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

Can form explosive mixture with air. May react violently with oxidants.

### 10.4. Conditions to avoid

Keep away from heat/sparks/open flames/hot surfaces. – No smoking.

### 10.5. Incompatible materials

Air, Oxidizer. Chlorine dioxide.

### 10.6. Hazardous decomposition products

Thermal decomposition or burning may produce carbon monoxide, carbon dioxide, and hydrogen. The welding and cutting process may form reaction products such as carbon monoxide and carbon



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dioxide. Other decomposition products of normal operation originate from the volatilization, reaction, or oxidation of the material being worked.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity : Not classified

| Propane ( \f )74-98-6 | |
|---|---|
| LC50 inhalation rat (mg/l) | 658 mg/l/4h |
| ATE US (vapors) | 658.000 mg/l/4h |
| ATE US (dust, mist) | 658.000 mg/l/4h |

Skin corrosion/irritation : Not classified

pH: Not applicable.

Serious eye damage/irritation : Not classified

pH: Not applicable.

Respiratory or skin sensitization : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not classified

## SECTION 12: Ecological information

### 12.1. Toxicity

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

### 12.2. Persistence and degradability

| Propane (74-98-6) | |
|---|---|
| Persistence and degradability | The substance is biodegradable. Unlikely to persist. |

### 12.3. Bioaccumulative potential

| Propane (74-98-6) | |
|---|---|
| Log Pow | 2.36 |
| Log Kow | Not applicable. |
| Bioaccumulative potential | Not expected to bioaccumulate due to the low log Kow (log Kow < 4). Refer to section 9. |

### 12.4. Mobility in soil

| Propane (74-98-6) | |
|---|---|
| Mobility in soil | No data available. |
| Ecology - soil | Because of its high volatility, the product is unlikely to cause ground or water pollution. |

### 12.5. Other adverse effects

Effect on ozone layer : None.

Effect on the global warming : No known effects from this product.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

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



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## SECTION 14: Transport information

In accordance with DOT

| | | |
|---|---|---|
| Transport document description | : | UN1978 Propane (see also Petroleum gases, liquefied), 2.1 |
| UN-No.(DOT) | : | UN1978 |
| Proper Shipping Name (DOT) | : | Propane<br>see also Petroleum gases, liquefied |
| Transport hazard class(es) (DOT) | : | 2.1 - Class 2.1 - Flammable gas 49 CFR 173.115 |
| Hazard labels (DOT) | : | 2.1 - Flammable gas |




| | | |
|---|---|---|
| DOT Special Provisions (49 CFR 172.102) | : | 19 - For domestic transportation only, the identification number UN1075 may be used in place of the identification number specified in column (4) of the 172.101 table. The identification number used must be consistent on package markings, shipping papers and emergency response information.<br>T50 - When portable tank instruction T50 is referenced in Column (7) of the 172.101 Table, the applicable liquefied compressed gases are authorized to be transported in portable tanks in accordance with the requirements of 173.313 of this subchapter. |

### Additional information

| | | |
|---|---|---|
| Emergency Response Guide (ERG) Number | : | 115 (UN1075) |
| Other information | : | No supplementary information available. |
| Special transport precautions | : | Avoid transport on vehicles where the load space is not separated from the driver's compartment. Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency. Before transporting product containers: - Ensure there is adequate ventilation. - Ensure that containers are firmly secured. - Ensure cylinder valve is closed and not leaking. - Ensure valve outlet cap nut or plug (where provided) is correctly fitted. - Ensure valve protection device (where provided) is correctly fitted. |

### Transport by sea

| | | |
|---|---|---|
| UN-No. (IMDG) | : | 1978 |
| Proper Shipping Name (IMDG) | : | PROPANE |
| Class (IMDG) | : | 2 - Gases |
| MFAG-No | : | 115 |

### Air transport

| | | |
|---|---|---|
| UN-No.(IATA) | : | 1978 |
| Proper Shipping Name (IATA) | : | PROPANE |
| Class (IATA) | : | 2 |
| Civil Aeronautics Law | : | Gases under pressure/Gases flammable under pressure |

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

| **Propane (74-98-6)** | |
|---|---|
| Listed on the United States TSCA (Toxic Substances Control Act) inventory | |
| SARA Section 311/312 Hazard Classes | Immediate (acute) health hazard<br>Sudden release of pressure hazard<br>Fire hazard |

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



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

### 15.2. International regulations

#### CANADA

| **Propane (74-98-6)** |
|---|
| Listed on the Canadian DSL (Domestic Substances List) |

#### EU-Regulations

| **Propane (74-98-6)** |
|---|
| Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances) |

#### 15.2.2. National regulations

| **Propane (74-98-6)** |
|---|
| Listed on the AICS (Australian Inventory of Chemical Substances)<br>Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)<br>Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory<br>Listed on the Korean ECL (Existing Chemicals List)<br>Listed on NZIoC (New Zealand Inventory of Chemicals)<br>Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances) |

### 15.3. US State regulations

| **Propane(74-98-6)** | |
|---|---|
| U.S. - California - Proposition 65 - Carcinogens List | No |
| U.S. - California - Proposition 65 - Developmental Toxicity | No |
| U.S. - California - Proposition 65 - Reproductive Toxicity - Female | No |
| U.S. - California - Proposition 65 - Reproductive Toxicity - Male | No |
| State or local regulations | U.S. - Massachusetts - Right To Know List<br>U.S. - New Jersey - Right to Know Hazardous Substance List<br>U.S. - Pennsylvania - RTK (Right to Know) List |

California Proposition 65 - This product contains, or may contain, trace quantities of a substance(s) known to the state of California to cause cancer and/or reproductive toxicity

## SECTION 16: Other information

Revision date : 4/8/2015 12:00:00 AM



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Other information : When using this product in welding and cutting, read and understand the manufacturer's instructions and the precautionary label on the product. Ask your welding products supplier for a copy of Praxair's free safety booklet, P-2035, Precautions and Safe Practices for Gas Welding, Cutting, and Heating, and for other manufacturers' safety publications. For a detailed treatment, get ANSI Z49.1, Safety in Welding, Cutting, and Allied Processes, published by the American Welding Society (AWS), www.aws.org. Order AWS documents from Global Engineering Documents, global.ihs.com. Arcs and sparks can ignite combustible materials. Prevent fires. Refer to NFPA 51B, Standard for Fire Prevention During Welding, Cutting, and Other Hotwork. Do not strike an arc on the container. The defect produced by an arc burn may lead to container rupture.

Fumes and gases produced during welding and cutting processes can be dangerous to your health and may cause serious lung disease. KEEP YOUR HEAD OUT OF FUMES. DO NOT BREATHE FUMES AND GASES. Use enough ventilation, local exhaust, or both to keep fumes and gases from your breathing zone and the general area. Short-term overexposure to fumes may cause dizziness, nausea, and dryness or irritation of the nose, throat, and eyes; or may cause other similar discomfort. Contaminants in the air may add to the hazard of fumes and gases.

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

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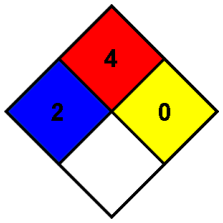
NFPA health hazard : 2 - Intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical attention is given.

NFPA fire hazard : 4 - Will rapidly or completely vaporize at normal pressure and temperature, or is readily dispersed in air and will burn readily.

NFPA reactivity : 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.




**HMIS III Rating**

Health : 1 Slight Hazard - Irritation or minor reversible injury possible

Flammability : 4 Severe Hazard

Physical : 2 Moderate Hazard



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



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# Material Safety Data Sheet

Product Name: **PROPANE**



## SECTION 1 - PRODUCT IDENTIFICATION

Product Name: **PROPANE**

Synonyms: Dimethl Methane
HD-5 Propane

Chemical Family: Aliphatic Hydrocarbon

Chemical Formula: CH3 CH2 CH3

Manufacturer / Distributor
DCP Midstream
370 17th Street, Suite 2500
Denver, CO 80202

Emergency Phone Numbers:
(800) 424-9300 (Chemtrec)
(303) 595-3331 (DCP Midstream)

CAS #: 74-98-6

## SECTION 2 - PHYSICAL PROPERTIES

| Boiling Point | Melting Point | Specific Gravity (H2O = 1) |
|---|---|---|
| -40° F | N.A. | 0.5077 |
| **% Solubility in Water** | **Vapor Density (Air = 1)** | **Vapor Pressure** |
| Slight | 1.5 | 760 mm Hg @ 25° C |
| **PH** | **Odor** | **Appearance** |
| N.A. | Odorless | Colorless Gas |

## SECTION 3 - FIRE AND EXPLOSION HAZARD DATA

| Flash Point | Autoignition Temp. | Explosive Limits (% by Volume in Air) |
|---|---|---|
| -156° F | 450° C | Lower / Upper 2.1 / 9.5 |

NFPA Classification: Health: 1 Fire: 4 Reactivity: 0 Other:

Extinguishing Media:

Class b fire extinguishing media such as halon, co2 or dry chemical can be used. Fire fighting should be attempted only by those who are adequately trained.

Special Fire Fighting Procedures:

Stop the flow of gas and allow fire to burn out. Extinguishing the flame before shutting off the supply can cause the formation of explosive mixtures. In some cases it may be preferred to allow the flame to continue to burn. Keep the surrounding area cool with water spray and prevent further ignition of combustible material.

Stability: The Material Is Stable

Conditions To Avoid: Sources Of Heat Or Ignition

Hazardous Decomposition Products: Carbon Monoxide, Carbon Dioxide

Incompatible Materials: Strong Oxidizers (E. G. Chlorine) , Mineral Acids

Hazardous Polymerization: Will Not Occur

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Aetna Bridge Company

Product Name: **PROPANE**

## SECTION 4 - PRODUCT COMPOSITION AND EXPOSURE LIMITS

| CAS # | Components | Percent Range | TLV (ACGIH) | PEL (OSHA) | REL (NIOSH) |
|---|---|---|---|---|---|
| 74-98-6 | Propane | 97 - 98 | 4508 mg/m3 | 1000 ppm** | 1000 ppm |
| 106-97-8 | Butanes | < 1.5 | NE | 800 ppm* | 800 ppm |
| 115-07-1 | Propylene | < 5 | NE | NE | NE |

8hr TWA unless otherwise specified

* For n-butane

** Propane is a simple asphyxiant by ACGIH standards.

## SECTION 5 - POTENTIAL HEALTH EFFECTS

Eye:

Propane is generally non-irritating to eyes. Pressurized gas can cause mechanical injury to the eye. Liquefied gas may cause freeze burns upon direct contact.

Skin:

Liquefied gas may cause freeze burns upon direct contact.

Ingestion:

Ingestion not likely

Inhalation:

Simple asphyxiant

Additional Toxicity Information:

Extreme over exposure may produce dizziness, headache, disorientation, excitation, fatigue, inability to concentrate, vomiting, coughing, anesthesia, unconsciousness and death.

**Emergency First Aid Procedures**

Eye:

Immediately flush eyes with running water for at least fifteen minutes. Call a physician if symptoms or irritation occur.

Skin:

Immediately flush skin with running water for at least fifteen minutes. Call a physician if symptoms or irritation occur.

Inhalation:

Move person to fresh air if not breathing or if no heartbeat, give artificial respiration or cardiopulmonary resuscitation. Immediately call physician.

Ingestion:

Ingestion not likely.

## SECTION 6 - SPECIAL PROTECTION INFORMATION

Ventilation:
Local or general exhaust required if used in an enclosed area in order to keep concentrations below the lower explosive limit.

Respiratory:
Use atmosphere supplied respirators in the event of oxygen deficiency.

Self-Contained Breathing Apparatus should be used for fire fighting.

Use a NIOSH / MSHA approved SCBA.

Eye Protection:
Goggles or face shield may be needed when handling pressurized gases.

Other Protective Equipment:
Use explosion-proof equipment.

## SECTION 7 - SPILL OR LEAK PROCEDURES

Environmental Effects:
Most components of propane are heavier than air and will stay in low lying areas if ventilation or wind is not present.

Steps To Be Taken In Case Of Spill, Leak Or Release:
Keep public away. Shut off source if possible to do so without hazard. Wear appropriate safety equipment if conditions warrant. Protect from ignition. Ventilate area thoroughly. Advise local and state emergency services agencies, if appropriate.

Waste Disposal Method:
Preferred method of disposal is burning as a vapor in a properly designed flare. Special care must be taken to ensure complete dissipation of propane below lower explosive limit.

## SECTION 8 - HANDLING AND STORAGE PRECAUTIONS

Product should be handled and stored in accordance with industry accepted practices. In the absence of specific local code requirements, NFPA or OSHA requirements should be followed. Use appropriate grounding and bonding practices. Store in properly closed containers that are appropriately labeled. Do not expose to heat, open flame, strong oxidizers or other sources of ignition.

**Naturally Occurring Radioactive Materials (NORM)**
Industry experience indicates that natural gas may contain small amounts of radon, a naturally occurring radioactive gas. The solid decay products of radon, called radon daughters, can accumulate inside production and process equipment handling natural gas liquids. Scales, deposits, and sludges from this equipment may have a significant accumulation of this NORM.

Gamma radiation may be detected above background external to equipment contaminated with this type of NORM. Such equipment should be assessed for external gamma radiation; access around the equipment may need to be restricted in accordance with OSHA 29 CFR 1910.96 during operation. Regardless of external gamma radiation levels, this equipment should also be assumed to be internally contaminated with long half-life decay products that emit beta and alpha radiation, which is a radiation hazard if inhaled or ingested. Unless measurements indicate otherwise, steps should be taken to minimize skin and inhalation exposure to NORM dusts/mists by wearing personal protective clothing (such as Tyvek ® (DuPont), utilizing respiratory protection (minimum of HEPA filter), and practicing good personal hygiene.

Product Name: **PROPANE**

## SECTION 9 - HAZARD WARNING

Danger!
Extremely Flammable
Gas Under Pressure

## SECTION 10 - REGULATORY INFORMATION

Sara Title III / Superfund Amendments And Re-Authorization Act Of 1986 -Sections 302, 304, 311, 312 and 313.

The following regulations apply to this product:

Sections 311 And 312 - Material Safety Data Sheet Requirements:

40 CFR Part 370 (52 Fr 38344 - October 15, 1987).

Depending on local, state, and federal regulations, material safety data sheets (msd's) or list of msd's (product names) may be required to be submitted to the state emergency response commission, local emergency planning committee, and local fire department if you have:

10,000 pounds or more of an OSHA hazardous substance* or
500 pounds or the threshold planning quantity whichever is less, of an extremely hazardous substance.

* Reportable quantity levels can vary from state to state and year to year depending on applicable state and/or Federal Regulations.

This product is covered under the criteria defined in OSHA's Hazard Communication Standard 29 CFR 1910.1200 (52 FR 31852 - August 24, 1987) and should be reported under the following EPA Hazard Categories:

Immediate (Acute) Health Hazard
Delayed (Chronic) Health Hazard
XX Fire Hazard
XX Sudden Release Of Pressure Hazard
Reactive Hazard

Department Of Transportation:

49 CFR 172.01 as revised on May 1, 1997

| | |
|---|---|
| Proper Shipping Name: | Liquefied Petroleum Gas |
| Dot Classification: | Flammable Gas |
| Dot Identification Number: | Un 1075 |
| Placard: | Flammable Gas / 1075 |
| Hazard Class: | 2.1 |

Product Name: **PROPANE**

## SECTION 11 - COMMENTS

MSDS Date: 02 / 22 / 94

MSDS Updated: 01 / 11 / 2007

*** Disclaimer ***

This 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. Such information is, to the best of DCP Midstream's knowledge and belief, accurate and reliable as of the date indicated. However, no representation, warranty or guarantee is made as to its accuracy reliability or completeness. It is the user's responsibility to satisfy himself as to the suitableness and completeness of such information for his own particular use.

# Oxygen, compressed

Safety Data Sheet P-4638

according to U.S. Code of Federal Regulations 29 CFR 1910.1200, Hazard Communication.

Date of issue: 01/01/1979 Revision date: 06/23/2015 Supersedes: 05/11/2015

## SECTION: 1. Product and company identification

### 1.1. Product identifier

| | | |
|---|---|---|
| Product form | : | Substance |
| Name | : | Oxygen, compressed |
| CAS No | : | 7782-44-7 |
| Formula | : | O2 |
| Other means of identification | : | Oxygen, Compressed; MediPure Oxygen; Aviator's Breathing Oxygen; USP Oxygen; Oxygen - Diving Grade |

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

| | | |
|---|---|---|
| Use of the substance/mixture | : | Medical applications.<br>Industrial use<br>Diving Gas (Underwater Breathing) |

### 1.3. Details of the supplier of the safety data sheet

Praxair, Inc.
39 Old Ridgebury Road
Danbury, CT 06810-5113 - USA
T 1-800-772-9247 (1-800-PRAXAIR) - F 1-716-879-2146
www.praxair.com

### 1.4. Emergency telephone number

| | | |
|---|---|---|
| Emergency number | : | Onsite Emergency: 1-800-645-4633<br><br>CHEMTREC, 24hr/day 7days/week<br>— Within USA: 1-800-424-9300, Outside USA: 001-703-527-3887<br>(collect calls accepted, Contract 17729) |

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

**Classification (GHS-US)**

| | |
|---|---|
| Ox. Gas 1 | H270 |
| Compressed gas | H280 |

### 2.2. Label elements

**GHS-US labeling**

Hazard pictograms (GHS-US) :



GHS03 GHS04

| | | |
|---|---|---|
| Signal word (GHS-US) | : | DANGER |
| Hazard statements (GHS-US) | : | H270 - MAY CAUSE OR INTENSIFY FIRE; OXIDIZER<br>H280 - CONTAINS GAS UNDER PRESSURE; MAY EXPLODE IF HEATED |
| Precautionary statements (GHS-US) | : | P202 - Do not handle until all safety precautions have been read and understood<br>P220 - Keep/Store away from combustible materials, clothing<br>P244 - Keep reduction valves/valves and fittings free from oil and grease<br>P271+P403 - Use and store only outdoors or in a well-ventilated place.<br>P370+P376 - In case of fire: Stop leak if safe to do so<br>CGA-PG05 - Use a back flow preventive device in the piping.<br>CGA-PG20+CGA-PG10 - Use only with equipment of compatible materials of construction and rated for cylinder pressure.<br>CGA-PG22 - Use only with equipment cleaned for oxygen service.<br>CGA-PG21 - Open valve slowly.<br>CGA-PG06 - Close valve after each use and when empty. |



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CGA-PG02 - Protect from sunlight when ambient temperature exceeds 52°C (125°F).

### 2.3. Other hazards

Other hazards not contributing to the classification : Breathing 80 percent or more oxygen at atmospheric pressure for more than a few hours may cause nasal stuffiness, cough, sore throat, chest pain, and breathing difficulty. Breathing oxygen at higher pressure increases the likelihood of adverse effects within a shorter time period. Breathing pure oxygen under pressure may cause lung damage and central nervous system (CNS) effects, resulting in dizziness, poor coordination, tingling sensation, visual and hearing disturbances, muscular twitching, unconsciousness, and convulsions. Breathing oxygen under pressure may cause prolongation of adaptation to darkness and reduced peripheral vision.

### 2.4. Unknown acute toxicity (GHS-US)

No data available

## SECTION 3: Composition/information on ingredients

### 3.1. Substance

Name : Oxygen, compressed

CAS No : 7782-44-7

| Name | Product identifier | % |
|---|---|---|
| Oxygen | (CAS No) 7782-44-7 | 99.5 - 100 |

### 3.2. Mixture

Not applicable

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

First-aid measures after inhalation : Move to fresh air. Get medical advice/attention.

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

First-aid measures after eye contact : Adverse effects not expected from this product. In case of eye irritation: Rinse immediately with plenty of water. Consult an ophthalmologist if irritation persists.

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

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

No additional information available

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

None.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

Suitable extinguishing media : Vigorously accelerates combustion. Use media appropriate for surrounding fire. Water (e.g., safety shower) is the preferred extinguishing media for clothing fires.

### 5.2. Special hazards arising from the substance or mixture

Fire hazard : Oxidizing agent; vigorously accelerates combustion. Contact with flammable materials may cause fire or explosion.

### 5.3. Advice for firefighters

Firefighting instructions : High-pressure, oxidizing gas.

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

Special protective equipment for fire fighters : Standard protective clothing and equipment (Self Contained Breathing Apparatus) for fire fighters.



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| | | |
|---|---|---|
| Specific methods | : | Use fire control measures appropriate for the surrounding fire. Exposure to fire and heat radiation may cause gas containers to rupture. Cool endangered containers with water spray jet from a protected position. Prevent water used in emergency cases from entering sewers and drainage systems.<br><br>Stop flow of product if safe to do so.<br><br>Use water spray or fog to knock down fire fumes if possible. |
| Other information | : | Heat of fire can build pressure in container and cause it to rupture. Containers are equipped with a pressure relief device. (Exceptions may exist where authorized by DOT.) No part of the container should be subjected to a temperature higher than 125°F (52°C). Smoking, flames, and electric sparks in the presence of enriched oxygen atmospheres are potential explosion hazards. |

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

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

#### 6.1.1. For non-emergency personnel

No additional information available

#### 6.1.2. For emergency responders

No additional information available

### 6.2. Environmental precautions

Try to stop release.

### 6.3. Methods and material for containment and cleaning up

No additional information available

### 6.4. Reference to other sections

See also sections 8 and 13.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

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



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### 7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store only where temperature will not exceed 125°F (52°C). Post "No Smoking or Open Flames" signs in storage and use areas. There must be no sources of ignition. Separate packages and protect against potential fire and/or explosion damage following appropriate codes and requirements (e.g., NFPA 30, NFPA 55, NFPA 70, and/or NFPA 221 in the U.S.) or according to requirements determined by the Authority Having Jurisdiction (AHJ). Always secure containers upright to keep them from falling or being knocked over. Install valve protection cap, if provided, firmly in place by hand when the container is not in use. Store full and empty containers separately. Use a first-in, first-out inventory system to prevent storing full containers for long periods. For other precautions in using this product, see section 16.

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

### 7.3. Specific end use(s)

None.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

| Oxygen, compressed (7782-44-7) | |
|---|---|
| ACGIH | Not established |
| USA OSHA | Not established |

| Oxygen (7782-44-7) | |
|---|---|
| ACGIH | Not established |
| USA OSHA | Not established |

### 8.2. Exposure controls

Appropriate engineering controls : Avoid oxygen rich (>23.5%) atmospheres. Use a local exhaust system with sufficient flow velocity to maintain an adequate supply of air in the worker's breathing zone. Mechanical (general): General exhaust ventilation may be acceptable if it can maintain an adequate supply of air.

Eye protection : Wear safety glasses with side shields.

Skin and body protection : Wear metatarsal shoes and work gloves for cylinder handling, and protective clothing where needed. Wear appropriate chemical gloves during cylinder changeout or wherever contact with product is possible. Select per OSHA 29 CFR 1910.132, 1910.136, and 1910.138. As needed for welding, wear hand, head, and body protection to help prevent injury from radiation and sparks. (See ANSI Z49.1.) At a minimum, this includes welder's gloves and protective goggles, and may include arm protectors, aprons, hats, and shoulder protection as well as substantial clothing.

Respiratory protection : When workplace conditions warrant respirator use, follow a respiratory protection program that meets OSHA 29 CFR 1910.134, ANSI Z88.2, or MSHA 30 CFR 72.710 (where applicable). Use an air-supplied or air-purifying cartridge if the action level is exceeded. Ensure that the respirator has the appropriate protection factor for the exposure level. If cartridge type respirators are used, the cartridge must be appropriate for the chemical exposure (e.g., an organic vapor cartridge). For emergencies or instances with unknown exposure levels, use a self-contained breathing apparatus (SCBA).

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state : Gas

Appearance : Colorless gas.

Molecular mass : 32 g/mol

Color : Colorless.



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| | | |
|---|---|---|
| Odor | : | No odor warning properties. |
| Odor threshold | : | No data available |
| pH | : | Not applicable. |
| Relative evaporation rate (butyl acetate=1) | : | No data available |
| Relative evaporation rate (ether=1) | : | Not applicable. |
| Melting point | : | -219 °C (-362°F) |
| Freezing point | : | No data available |
| Boiling point | : | -183 °C (-297°F) |
| Flash point | : | Not applicable. |
| Critical temperature | : | -118.6 °C (-181.48°F) |
| Auto-ignition temperature | : | Not applicable. |
| Decomposition temperature | : | No data available |
| Flammability (solid, gas) | : | No data available |
| Vapor pressure | : | Not applicable. |
| Critical pressure | : | 50.4 bar (731.4 psia) |
| Relative vapor density at 20 °C | : | 0.0827 lb/ft3 (1.325 kg/m3) absolute vapor density at 70°F/21.1°C, 1 atm |
| Relative density | : | 1.1 |
| Density | : | 1.4289 kg/m³ (at 21.1 °C) |
| Relative gas density | : | 1.1 |
| Solubility | : | Water: 39 mg/l |
| Log Pow | : | Not applicable. |
| Log Kow | : | Not applicable. |
| Viscosity, kinematic | : | Not applicable. |
| Viscosity, dynamic | : | Not applicable. |
| Explosive properties | : | Not applicable. |
| Oxidizing properties | : | Oxidizer. |
| Explosion limits | : | No data available |

### 9.2. Other information

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

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

No additional information available

### 10.2. Chemical stability

Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

Violently oxidizes organic material.

### 10.4. Conditions to avoid

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

### 10.5. Incompatible materials

Keep equipment free from oil and grease. Consider the potential toxicity hazard due to the presence of chlorinated or fluorinated polymers in high pressure (> 30 bar) oxygen lines in case of combustion. May react violently with combustible materials. May react violently with reducing agents.

### 10.6. Hazardous decomposition products

None.



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## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity : Not classified

Skin corrosion/irritation : Not classified

pH: Not applicable.

Serious eye damage/irritation : Not classified

pH: Not applicable.

Respiratory or skin sensitization : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not classified

## SECTION 12: Ecological information

### 12.1. Toxicity

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

### 12.2. Persistence and degradability

| Oxygen, compressed (7782-44-7) | |
|---|---|
| Persistence and degradability | No ecological damage caused by this product. |

| Oxygen (7782-44-7) | |
|---|---|
| Persistence and degradability | No ecological damage caused by this product. |

### 12.3. Bioaccumulative potential

| Oxygen, compressed (7782-44-7) | |
|---|---|
| Log Pow | Not applicable. |
| Log Kow | Not applicable. |
| Bioaccumulative potential | No ecological damage caused by this product. |

| Oxygen (7782-44-7) | |
|---|---|
| Log Pow | Not applicable. |
| Log Kow | Not applicable. |
| Bioaccumulative potential | No ecological damage caused by this product. |

### 12.4. Mobility in soil

| Oxygen, compressed (7782-44-7) | |
|---|---|
| Mobility in soil | No data available. |
| Ecology - soil | No ecological damage caused by this product. |

| Oxygen (7782-44-7) | |
|---|---|
| Mobility in soil | No data available. |
| Ecology - soil | No ecological damage caused by this product. |

### 12.5. Other adverse effects

Effect on ozone layer : None.

Effect on the global warming : No known effects from this product.



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## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

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

## SECTION 14: Transport information

In accordance with DOT

Transport document description : UN1072 Oxygen, compressed, 2.2

UN-No.(DOT) : UN1072

Proper Shipping Name (DOT) : Oxygen, compressed

Transport hazard class(es) (DOT) : 2.2 - Class 2.2 - Non-flammable compressed gas 49 CFR 173.115

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




DOT Special Provisions (49 CFR 172.102) : 110 - Fire extinguishers transported under UN1044 may include installed actuating cartridges (cartridges, power device of Division 1.4C or 1.4S), without changing the classification of Division 2.2, provided the aggregate quantity of deflagrating (propellant) explosives does not exceed 3.2 grams per extinguishing unit.
A14 - This material is not authorized to be transported as a limited quantity or consumer commodity in accordance with 173.306 of this subchapter when transported aboard an aircraft.

### Additional information

Emergency Response Guide (ERG) Number : 122 (UN1072)

Other information : No supplementary information available.

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

### Transport by sea

UN-No. (IMDG) : 1072

Proper Shipping Name (IMDG) : OXYGEN, COMPRESSED

Class (IMDG) : 2 - Gases

MFAG-No : 122

### Air transport

UN-No. (IATA) : 1072

Proper Shipping Name (IATA) : Oxygen, compressed

Class (IATA) : 2

Civil Aeronautics Law : Gases under pressure/Gases nonflammable nontoxic under pressure

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

| **Oxygen, compressed (7782-44-7)** | |
|---|---|
| Listed on the United States TSCA (Toxic Substances Control Act) inventory | |
| SARA Section 311/312 Hazard Classes | Sudden release of pressure hazard<br>Fire hazard |

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



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

### 15.2. International regulations

#### CANADA

| **Oxygen, compressed (7782-44-7)** |
|---|
| Listed on the Canadian DSL (Domestic Substances List) |

| **Oxygen (7782-44-7)** |
|---|
| Listed on the Canadian DSL (Domestic Substances List) |

#### EU-Regulations

| **Oxygen, compressed (7782-44-7)** |
|---|
| Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances) |

#### 15.2.2. National regulations

| **Oxygen, compressed (7782-44-7)** |
|---|
| Listed on the AICS (Australian Inventory of Chemical Substances)<br>Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)<br>Listed on the Korean ECL (Existing Chemicals List)<br>Listed on NZIoC (New Zealand Inventory of Chemicals)<br>Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances) |

### 15.3. US State regulations

| **Oxygen, compressed(7782-44-7)** | |
|---|---|
| U.S. - California - Proposition 65 - Carcinogens List | No |
| U.S. - California - Proposition 65 - Developmental Toxicity | No |
| U.S. - California - Proposition 65 - Reproductive Toxicity - Female | No |
| U.S. - California - Proposition 65 - Reproductive Toxicity - Male | No |
| State or local regulations | U.S. - Massachusetts - Right To Know List<br>U.S. - New Jersey - Right to Know Hazardous Substance List<br>U.S. - Pennsylvania - RTK (Right to Know) List |

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

| **Oxygen (7782-44-7)** | | | | |
|---|---|---|---|---|
| U.S. - California - Proposition 65 - Carcinogens List | U.S. - California - Proposition 65 - Developmental Toxicity | U.S. - California - Proposition 65 - Reproductive Toxicity - Female | U.S. - California - Proposition 65 - Reproductive Toxicity - Male | No significant risk level (NSRL) |
| No | No | No | No | |

| **Oxygen (7782-44-7)** |
|---|
| U.S. - Massachusetts - Right To Know List<br>U.S. - New Jersey - Right to Know Hazardous Substance List<br>U.S. - Pennsylvania - RTK (Right to Know) List |

## SECTION 16: Other information

Revision date : 6/23/2015 12:00:00 AM



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

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

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

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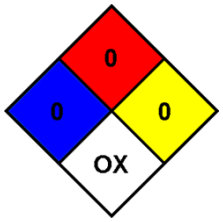
NFPA health hazard : 0 - Exposure under fire conditions would offer no hazard beyond that of ordinary combustible materials.

NFPA fire hazard : 0 - Materials that will not burn.

NFPA reactivity : 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.

NFPA specific hazard : OX - This denotes an oxidizer, a chemical which can greatly increase the rate of combustion/fire.




**HMIS III Rating**

Health : 0 Minimal Hazard - No significant risk to health

Flammability : 0 Minimal Hazard

Physical : 3 Serious Hazard

SDS US (GHS HazCom 2012) - Praxair

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



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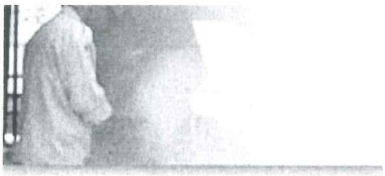

Acetylene Gas

**MSDS**

- Nitrogen Liquid
- Oxygen Liquid
- Argon Liquid
- Hydrogen Liquid
- Carbon dioxide Liquid
- Helium Liquid
- Acetylene Gas
- Argon Gas
- Carbon dioxide Gas
- Helium Gas
- Hydrogen Gas
- 'itrogen Gas
- Oxygen Gas
- Nitrous oxide
- Propane
- Compressed Air
- Carbon Monoxide
- Ethylene
- Ammonia

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## Part 1: Chemical Product and Company Identification

SUBSTANCE: ACETYLENE
TRADE NAMES/SYNONYMS: ETHYNE; WELDING GAS; ACETYLEN; ETHINE; NARCYLEN; VINYLENE; STCC 4905701; UN 1001; C2H2; RTECS AO9600000
CHEMICAL FAMILY: hydrocarbons, aliphatic
COMPANY: PT ANEKA GAS INDUSTRI
Wisma 77 Lt.6 Jl. S. Parman Kav.77,
Jakarta Barat 11410
PHONE: 62-21 53670071
Creation date: 12 December 2005

## Part 2: Composition, Information on ingredients

COMPONENT: ACETYLENE
CAS NUMBER: 74-86-2
EC NUMBER (EINECS): 200-816-9
EC INDEX NUMBER: 601-015-00-0
PERCENTAGE: >99
OTHER CONTAMINANTS: TRACES OF AIR, PHOSPHINE, ARSINE, HYDROGEN SULFIDE

## Part 3: Hazards Identifications

NNFPA RATINGS (SCALE 0-4): HEALTH=1 FIRE=4 REACTIVITY=3
EMERGENCY OVERVIEW: PHYSICAL DESCRIPTION: Colorless gas with ethereal odor when pure, garlic-like odor if impure.
MAJOR HEALTH HAZARDS: central nervous system depression, difficulty breathing
PHYSICAL HAZARDS: May explode when heated. Flammable gas. May cause flash fire.
POTENTIAL HEALTH EFFECTS: INHALATION: SHORT TERM EXPOSURE: nausea, vomiting, chest pain, wheezing, headache, symptoms of drunkenness, bluish skin color, suffocation, lung congestion, coma
LONG TERM EXPOSURE: no information on significant adverse effects
SKIN CONTACT: SHORT TERM EXPOSURE: rash
LONG TERM EXPOSURE: no information is available
EYE CONTACT: SHORT TERM EXPOSURE: no information on significant adverse effects
LONG TERM EXPOSURE: no information is available
INGESTION: SHORT TERM EXPOSURE: no information on significant adverse effects
LONG TERM EXPOSURE: no information is available

CARCINOGEN STATUS: OSHA: No NTP: No IARC: No .

## Part 4: First Aid Measures

INHALATION: If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention.
SKIN CONTACT: Wash exposed skin with soap and water.
EYE CONTACT: Flush eyes with plenty of water.
INGESTION: If a large amount is swallowed, get medical attention.
NOTE TO PHYSICIAN: For inhalation, consider oxygen.

**Part 5: Fire Fighting Measures**

FIRE AND EXPLOSION HAZARDS: Severe explosion hazard. Vapor/air mixtures are explosive. Electrostatic discharges may be generated by flow or agitation resulting in ignition or explosion.

EXTINGUISHING MEDIA: carbon dioxide, regular dry chemical Large fires: Use regular foam or flood with fine water spray.

FIRE FIGHTING: Move container from fire area if it can be done without risk. For fires in cargo or storage area: Cool containers with water from unmanned hose holder or monitor nozzles until well after fire is out. If this is impossible then take the following precautions: Keep unnecessary people away, isolate hazard area and deny entry. Let the fire burn. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. For tank, rail car or tank truck: Stop leak if possible without personal risk. Let burn unless leak can be stopped immediately. For smaller tanks or cylinders, extinguish and isolate from other flammables. Evacuation radius: 800 meters (1/2 mile). Stop flow of gas.

LOWER FLAMMABLE LIMIT: 2.5%

UPPER FLAMMABLE LIMIT: 100%

AUTOIGNITION: 581 F (305 C)

**Part 6: Accidental Release Measures**

OCCUPATIONAL RELEASE: Avoid heat, flames, sparks and other sources of ignition. Stop leak if possible without personal risk. Reduce vapors with water spray. Keep unnecessary people away, isolate hazard area and deny entry. Remove sources of ignition. Ventilate closed spaces before entering.

**Part 7: Handling and Storage**

STORAGE: Store and handle in accordance with current regulations and standards: OSHA 29 CFR 1910.102. Protect from physical damage. Store outside or in a detached building. Keep separated from incompatible substances. Store in a cool, dry place. Ventilation required. Avoid heat, flames, sparks and other sources of ignition. Secure to prevent tipping. Cylinder temperature should not exceed 125 F (52 C). 29 CFR Subpart "H"-Hazardous Materials. National Fire Protection Association publication #55, "Standard for the Storage, Use and Handling of Compressed and Liquified Gases in Portable Cylinders." Compressed Gas Association publication P-1, "Safe Handling of Compressed Gases in Containers".

**Part 8: Exposure Controls, Personal Protection**

EXPOSURE LIMITS: ACETYLENE: ACGIH (simple asphyxiant) 2500 ppm (2662 mg/m3) NIOSH recommended ceiling

MEASUREMENT METHOD: Gas collection bag; Gas chromatography with flame ionization detection; NIOSH Acetylene Criteria Document

VENTILATION: Provide local exhaust ventilation system. Ventilation equipment should be explosion-resistant if explosive concentrations of material are present. Ensure compliance with applicable exposure limits.

EYE PROTECTION: Eye protection not required, but recommended.

CLOTHING: Wear appropriate chemical resistant clothing.

GLOVES: Protective gloves are not required, but recommended.

RESPIRATOR: Under conditions of frequent use or heavy exposure, respiratory protection may be needed. Respiratory protection is ranked in order from minimum to maximum. Consider warning properties before use. Any supplied-air respirator with a full facepiece that is operated in a pressure-demand or other positive-pressure mode. Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode. For Unknown Concentrations or Immediately Dangerous to Life or

Health - Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full facepiece

**Part 9: Physical and Chemical Properties**

PHYSICAL DESCRIPTION: Colorless gas with ethereal odor when pure, garlic-like odor if impure.
MOLECULAR WEIGHT: 26.04
MOLECULAR FORMULA: H-C-C-H
BOILING POINT: Not available
FREEZING POINT: Not available
SUBLIMATION POINT: -119 F (-84 C)
VAPOR PRESSURE: 760 mmHg @ -84 C
VAPOR DENSITY (air=1): 0.90
SPECIFIC GRAVITY: Not applicable
DENSITY: 1.1747 g/L @ 0 C
WATER SOLUBILITY: 0.94% @ 25 C
PH: Not applicable
VOLATILITY: Not applicable
ODOR THRESHOLD: Not available
EVAPORATION RATE: Not applicable
VISCOSITY: 0.010 cP @ 20 C
COEFFICIENT OF WATER/OIL DISTRIBUTION: Not applicable
SOLVENT SOLUBILITY: Soluble: acetone, benzene, chloroform, ether

**Part 10: Stability and Reactivity**

REACTIVITY: May decompose violently on heating. May explode when heated. CONDITIONS TO AVOID: Avoid heat, flames, sparks and other sources of ignition. Containers may rupture or explode if exposed to heat. INCOMPATIBILITIES: metals, halogens, oxidizing materials, metal carbide, reducing agents, halo carbons ACETYLENE: BRASS: Forms explosive acetylides. BROMINE: Explosive reaction. CALCIUM HYPOCHLORITE: May form explosive chloroacetylides. CESIUM HYDRIDE: Vigorous reaction in the presence of moisture or above 42 C. CHLORINE: Explosive reaction. COBALT: Incandescent decomposition reaction. COPPER + SALTS: Forms explosive acetylides. CUPROUS CARBIDE: Explodes if preheated. FLUORINE: Violent reaction. IODINE: Explosive reaction. MERCURIC NITRATE: Forms shock-sensitive acetylide. MERCURY + SALTS: Forms explosive acetylides. NITRIC ACID (CONCENTRATED): Forms explosive trinitromethane. NITROGEN OXIDE: May ignite above 30 C. OXIDIZERS: Violent or explosive reaction. OXYGEN: Dangerous explosive reaction. OZONE: May violently explode. POTASSIUM (MOLTEN): Ignites, then explodes. RUBIDIUM HYDRIDE: Vigorous reaction in the presence of moisture. SILVER + SALTS: Forms explosive acetylides. SILVER NITRATE: Forms explosive acetylide in ammonia solutions. SODIUM HYDRIDE: Vigorous reaction in the presence of moisture. TRIFLUOROMETHYL HYPOFLUORITE: Explosive reaction.

HAZARDOUS DECOMPOSITION: Thermal decomposition products: oxides of carbon

POLYMERIZATION: Polymerizes with evolution of heat. Avoid contact with curing agents, accelerators, and/or initiators

**Part 11: Toxicological Information**

ACETYLENE: TOXICITY DATA: 20 pph inhalation-human TCLo; 50 pph/5 minute(s) inhalation-human LCLo; 50 pph/5 minute(s) inhalation-mammal LCLo

ACUTE TOXICITY LEVEL: Insufficient Data.

TARGET ORGANS: central nervous system

ADDITIONAL DATA: Stimulants such as epinephrine may induce ventricular fibrillation.

HEALTH EFFECTS: INHALATION: ACUTE EXPOSURE: ACETYLENE: Pure acetylene at a level of 2.5% in air is reported to be nontoxic. Slight intoxication with reversible narcosis may occur at 10%; marked intoxication with dyspnea, headache, and staggering gait at 20%; loss of coordination at 30%; and loss of consciousness at 33-35% for 5-7 minutes.

Complete anesthesia, increased blood pressure, narcosis, and stimulated respiration may occur at concentrations up to 80%. Other reported effects may include mild gastric symptoms, dizziness, mental confusion, emotional instability, hypercapnia, and myocardial sensitization. Asphyxiation may occur by reducing the oxygen concentration in respirable air to low levels. Commercial acetylene often contains impurities which may be responsible for symptoms before the asphyxiant level is reached. Symptoms may include rapid respiration, air hunger, impaired mental alertness, cyanosis, weak and irregular pulse, rapid fatigue, nausea, vomiting, prostration, metabolic acidosis, hyperglycemia, ketonuria, elevated creatinine levels, impairment of judgement and sensation, pulmonary edema, loss of consciousness, coma, and death. A worker who inhaled acetylene gas from a leaking torch developed severe respiratory distress, including diaphragmatic breathing, rhonchi and wheezing, and chest pain. Examination revealed extensive pulmonary edema, bronchopneumonia, and pleural effusion in both lungs. Symptoms were thought to be due to impurities.

CHRONIC EXPOSURE: ACETYLENE: Exposure during the manufacture of acetylene from calcium carbide produced bronchitis and a stomach ulcer in a worker. Symptoms are believed to have originated from chronic phosphine poisoning. Intermittent exposure for 93 hours to 25% pure acetylene caused slight capillary hyperemia in experimental animals.

SKIN CONTACT: ACUTE EXPOSURE: ACETYLENE: No adverse effects have been reported from the pure gas. One case of urticaria has been reported following the use of an oxyacetylene torch in welding. It subsided within 6 hours after cessation of work. Symptoms were believed to result from impurities or combustion products in the gas.

CHRONIC EXPOSURE: ACETYLENE: No data available.

EYE CONTACT: ACUTE EXPOSURE: ACETYLENE: No adverse effects have been reported from the gas.

CHRONIC EXPOSURE: ACETYLENE: No data available.

INGESTION: ACUTE EXPOSURE: ACETYLENE: Ingestion of a gas is not likely.

CHRONIC EXPOSURE: ACETYLENE: No data available

**Part 12: Ecological Information**

Not available

**Part 13: Disposal Consideration**

Dispose in accordance with all applicable regulations.

**Part 14: Transport Information**

U.S. DOT 49 CFR 172.101: PROPER SHIPPING NAME: Acetylene, dissolved
ID NUMBER: UN1001 HAZARD CLASS OR DIVISION: 2.1
LABELING REQUIREMENTS: Flammable gas
PACKAGING AUTHORIZATIONS: EXCEPTIONS: None
NON-BULK PACKAGING: 49
CFR 173.303 BULK PACKAGING: None
QUANTITY LIMITATIONS: PASSENGER AIRCRAFT OR RAILCAR: Forbidden
CARGO AIRCRAFT ONLY: 15 kg
LAND TRANSPORT ADR/RID: SUBSTANCE NAME: Acetylene, dissolved
UN NUMBER: UN1001
ADR/RID CLASS: 2
ITEM NUMBER: 4F
WARNING SIGN/LABEL: 3; 13
HAZARD ID NUMBER: 239
AIR TRANSPORT IATA/ICAO: PROPER SHIPPING NAME: Acetylene, dissolved
UN/ID NUMBER: UN1001 IATA/ICAO CLASS: 2.1
LABEL: Flammable gas
MARITIME TRANSPORT IMDG: CORRECT TECHNICAL NAME: Acetylene, dissolved
UN/ID NUMBER: UN1001 IMDG CLASS: 2(2.1)
EmS No.: 2-07
MFAG Table No.: 310

IMDG CODE PAGE: 2101

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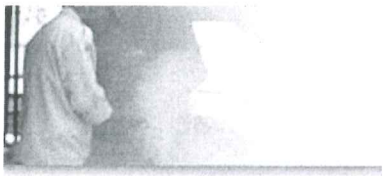

**Argon Gas**

**MSDS**

- Nitrogen Liquid
- Oxygen Liquid
- Argon Liquid
- Hydrogen Liquid
- Carbon dioxide Liquid
- Helium Liquid
- Acetylene Gas
- Argon Gas
- Carbon dioxide Gas
- Helium Gas
- Hydrogen Gas
- itrogen Gas
- Oxygen Gas
- Nitrous oxide
- Propane
- Compressed Air
- Carbon Monoxide
- Ethylene
- Ammonia

SA GLOBAL

## Part 1: Chemical Product and Company Identification

SUBSTANCE: ARGON, COMPRESSED TRADE NAMES/SYNONYMS: ARGON; STCC 4904502; UN 1006; AR; RTECS CF2300000
CHEMICAL FAMILY: non-metallic
COMPANY: PT ANEKA GAS INDUSTRI
Wisma 77 Lt.6 Jl. S. Parman Kav.77, Jakarta Barat 11410
PHONE: 62-21 53670071
Creation date: 12 December 2005

## Part 2: Composition, Information on ingredients

COMPONENT: ARGON, COMPRESSED CAS NUMBER: 7440-37-1 EC NUMBER (EINECS): 231-147-0 PERCENTAGE: 100.0

## Part 3: Hazards Identifications

NFPA RATINGS (SCALE 0-4): HEALTH=1 FIRE=0 REACTIVITY=0 EMERGENCY OVERVIEW: PHYSICAL DESCRIPTION: Odorless, tasteless, colorless inert gas. MAJOR HEALTH HAZARDS: difficulty breathing PHYSICAL HAZARDS: Containers may rupture or explode if exposed to heat. POTENTIAL HEALTH EFFECTS: INHALATION: SHORT TERM EXPOSURE: nausea, vomiting, dizziness, tingling sensation, suffocation, convulsions, coma LONG TERM EXPOSURE: no information on significant adverse effects SKIN CONTACT: SHORT TERM EXPOSURE: blisters, frostbite LONG TERM EXPOSURE: no information is available EYE CONTACT: SHORT TERM EXPOSURE: frostbite, blurred vision LONG TERM EXPOSURE: no information is available INGESTION: SHORT TERM EXPOSURE: frostbite LONG TERM EXPOSURE: no information is available CARCINOGEN STATUS: OSHA: No NTP: No IARC: No

## Part 4: First Aid Measures

INHALATION: If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention. SKIN CONTACT: If frostbite or freezing occur, immediately flush with plenty of lukewarm water (105-115 F; 41-46 C). DO NOT USE HOT WATER. If warm water is not available, gently wrap affected parts in blankets. Get immediate medical attention. EYE CONTACT: Flush eyes with plenty of water. INGESTION: If a large amount is swallowed, get medical attention. NOTE TO PHYSICIAN: For inhalation, consider oxygen.

## Part 5: Fire Fighting Measures

FIRE AND EXPLOSION HAZARDS: Negligible fire hazard. Containers may rupture or explode if exposed to heat. EXTINGUISHING MEDIA: carbon dioxide, regular dry chemical Large fires: Use regular foam or flood with fine water spray. FIRE FIGHTING: Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Stay away from the ends of tanks. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. For tank, rail car or tank truck, evacuation radius: 800 meters (1/2 mile)

## Part 6: Accidental Release Measures

OCCUPATIONAL RELEASE: Stop leak if possible without personal risk. Keep unnecessary people away, isolate hazard area and deny entry. Stay upwind and keep out of low areas.

**Part 7: Handling and Storage**

STORAGE: Cylinder temperature should not exceed 125 F (52 C). 29 CFR Subpart "H"-Hazardous Materials. National Fire Protection Association publication #55, "Standard for the Storage, Use and Handling of Compressed and Liquefied Gases in Portable Cylinders". Compressed Gas Association publication P-1, "Safe Handling of Compressed Gases in Containers". Store and handle in accordance with current regulations and standards: OSHA 29 CFR 1910.101

**Part 8: Exposure Controls, Personal Protection**

EXPOSURE LIMITS: ARGON, COMPRESSED: ARGON: ACGIH (simple asphyxiant) VENTILATION: Based on available information, additional ventilation is not required. Ensure compliance with applicable exposure limits. EYE PROTECTION: For the gas: Eye protection not required, but recommended. For the liquid: Wear splash resistant safety goggles. Contact lenses should not be worn. Provide an emergency eye wash fountain and quick drench shower in the immediate work area. CLOTHING: For the gas: Protective clothing is not required. For the liquid: Wear appropriate protective, cold insulating clothing. GLOVES: Wear insulated gloves. RESPIRATOR: Under conditions of frequent use or heavy exposure, respiratory protection may be needed. Respiratory protection is ranked in order from minimum to maximum. Consider warning properties before use. For Unknown Concentrations or Immediately Dangerous to Life or Health - Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full facepiece

**Part 9: Physical and Chemical Properties**

PHYSICAL DESCRIPTION: Odorless, tasteless, colorless inert gas. MOLECULAR WEIGHT: 39.948 MOLECULAR FORMULA: AR BOILING POINT: -303 F (-186 C) FREEZING POINT: -308 F (-189 C) VAPOR PRESSURE: 500 mmHg @ -190 C VAPOR DENSITY (air=1): 1.380 SPECIFIC GRAVITY: Not applicable DENSITY: 1.784 g/L @ 0 C WATER SOLUBILITY: 3.36% @ 20 C PH: Not applicable VOLATILITY: Not applicable ODOR THRESHOLD: Not available EVAPORATION RATE: Not applicable VISCOSITY: 0.0225 cP @ 25 C COEFFICIENT OF WATER/OIL DISTRIBUTION: Not applicable SOLVENT SOLUBILITY: Soluble: organic solvents

**Part 10: Stability and Reactivity**

REACTIVITY: Stable at normal temperatures and pressure. CONDITIONS TO AVOID: Protect from physical damage and heat. Containers may rupture or explode if exposed to heat. INCOMPATIBILITIES: ARGON: No data available. POLYMERIZATION: Will not polymerize.

**Part 11: Toxicological Information**

HEALTH EFFECTS: INHALATION: ARGON: See information on simple asphyxiants. ACUTE EXPOSURE: SIMPLE ASPHYXIANTS: The symptoms of asphyxia depend on the rapidity with which the oxygen deficiency develops and how long it continues. In sudden acute asphyxia, unconsciousness may be immediate. With slow development there may be rapid respiration and pulse, air hunger, dizziness, reduced awareness, tightness in the head, tingling sensations, incoordination, faulty judgement, emotional instability, and rapid fatigue. As the asphyxia progresses, nausea, vomiting, collapse, unconsciousness, convulsions, deep coma and death are possible. CHRONIC EXPOSURE: SIMPLE ASPHYXIANTS: No data available. SKIN CONTACT: ACUTE EXPOSURE: ARGON: No adverse effects have been reported from the gas. Due to rapid evaporation, the cryogenic liquid may cause frostbite with redness, tingling and pain or numbness. In more severe cases, the skin may become hard and white and develop blisters. CHRONIC EXPOSURE: ARGON: No data available. EYE CONTACT: ACUTE EXPOSURE: ARGON: No adverse effects have been reported from the gas. Due to evaporation, the cryogenic liquid may cause frostbite with redness, pain, and blurred vision. CHRONIC EXPOSURE: ARGON: No data available. INGESTION: ACUTE EXPOSURE: ARGON: Ingestion of a gas is unlikely. If the cryogenic liquid is swallowed, frostbite damage to the lips, mouth and mucous membranes may occur. CHRONIC EXPOSURE: ARGON: No data

available.

**Part 12: Ecological Information**

Not available

**Part 13: Disposal Consideration**

Dispose in accordance with all applicable regulations.

**Part 14: Transport Information**

U.S. DOT 49 CFR 172.101: PROPER SHIPPING NAME: Argon, compressed ID NUMBER: UN1006 HAZARD CLASS OR DIVISION: 2.2 LABELING REQUIREMENTS: Nonflammable gas PACKAGING AUTHORIZATIONS: EXCEPTIONS: 49 CFR 173.306 NON-BULK PACKAGING: 49 CFR 173.302 BULK PACKAGING: 49 CFR 173.314, 315 QUANTITY LIMITATIONS: PASSENGER AIRCRAFT OR RAILCAR: 75 kg CARGO AIRCRAFT ONLY: 150 kg LAND TRANSPORT ADR/RID: SUBSTANCE NAME: Argon, compressed UN NUMBER: UN1006 ADR/RID CLASS: 2 ITEM NUMBER: 1(a)/1A WARNING SIGN/LABEL: 2/2; 13 HAZARD ID NUMBER: 20 AIR TRANSPORT IATA/ICAO: PROPER SHIPPING NAME: Argon, compressed UN/ID NUMBER: UN1006 IATA/ICAO CLASS: 2.2 LABEL: Nonflammable gas MARITIME TRANSPORT IMDG: CORRECT TECHNICAL NAME: Argon, compressed UN/ID NUMBER: UN1006 IMDG CLASS: 2(2.2) EmS No.: 2-04 MFAG Table No.: 620 IMDG CODE PAGE: 2105

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**Carbon Dioxide Gas**

**MSDS**

- Nitrogen Liquid
- Oxygen Liquid
- Argon Liquid
- Hydrogen Liquid
- Carbon dioxide Liquid
- Helium Liquid
- Acetylene Gas
- Argon Gas
- Carbon dioxide Gas
- Helium Gas
- Hydrogen Gas
- 'itrogen Gas
- Oxygen Gas
- Nitrous oxide
- Propane
- Compressed Air
- Carbon Monoxide
- Ethylene
- Ammonia

SAI GLOBAL

## Part 1: Chemical Product and Company Identification

SUBSTANCE: CARBON DIOXIDE, GAS
TRADE NAMES/SYNONYMS: CARBONIC ACID GAS; CARBONIC ANHYDRIDE; CARBON DIOXIDE; CARBON OXIDE; STCC 4904535; UN 1013; CO2;RTECS FF6400000
CHEMICAL FAMILY: oxides of carbon
COMPANY: PT ANEKA GAS INDUSTRI
Wisma 77 Lt.6 Jl. S. Parman Kav.77,
Jakarta Barat 11410
PHONE: 62-21 53670071
Creation date: 12 December 2005

## Part 2: Composition, Information on ingredients

COMPONENT: CARBON DIOXIDE, GAS
CAS NUMBER: 124-38-9
EC NUMBER (EINECS): 204-696-9
PERCENTAGE: 100

## Part 3: Hazards Identifications

NFPA RATINGS (SCALE 0-4): HEALTH=1 FIRE=0 REACTIVITY=0
EMERGENCY OVERVIEW: PHYSICAL DESCRIPTION: Colorless, odorless gas, with a slight acidic taste.
MAJOR HEALTH HAZARDS: difficulty breathing
PHYSICAL HAZARDS: Containers may rupture or explode if exposed to heat.
POTENTIAL HEALTH EFFECTS: INHALATION: SHORT TERM EXPOSURE: ringing in the ears, nausea, irregular heartbeat, headache, drowsiness, dizziness, tingling sensation, visual disturbances, suffocation, convulsions, coma
LONG TERM EXPOSURE: no information on significant adverse effects
SKIN CONTACT: SHORT TERM EXPOSURE: blisters, frostbite
LONG TERM EXPOSURE: no information on significant adverse effects
EYE CONTACT: SHORT TERM EXPOSURE: irritation, blurred vision
LONG TERM EXPOSURE: no information on significant adverse effects
INGESTION: SHORT TERM EXPOSURE: frostbite
LONG TERM EXPOSURE: no information is available
CARCINOGEN STATUS: OSHA: No NTP: No IARC: No

## Part 4: First Aid Measures

INHALATION: If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention.

SKIN CONTACT: If frostbite or freezing occur, immediately flush with plenty of lukewarm water (105-115 F; 41-46 C). DO NOT USE HOT WATER. If warm water is not available, gently wrap affected parts in blankets. Get immediate medical attention.

EYE CONTACT: Flush eyes with plenty of water.

INGESTION: If a large amount is swallowed, get medical attention.

NOTE TO PHYSICIAN: For inhalation, consider oxygen

**Part 5: Fire Fighting Measures**

FIRE AND EXPLOSION HAZARDS: Negligible fire hazard.

EXTINGUISHING MEDIA: carbon dioxide, regular dry chemical Large fires: Use regular foam or flood with fine water spray.

FIRE FIGHTING: Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Stay away from the ends of tanks. For tank, rail car or tank truck, evacuation radius: 800 meters (1/2 mile). Use extinguishing agents appropriate for surrounding fire. Cool containers with water spray until well after the fire is out. Apply water from a protected location or from a safe distance. Do not get water directly on material. Reduce vapors with water spray. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas. Consider downwind evacuation if material is leaking.

**Part 6: Accidental Release Measures**

OCCUPATIONAL RELEASE: Do not touch spilled material. Stop leak if possible without personal risk. Keep unnecessary people away, isolate hazard area and deny entry. Ventilate closed spaces before entering.

**Part 7: Handling and Storage**

STORAGE: Cylinder temperature should not exceed 125 F (52 C). 29 CFR Subpart "H"-Hazardous Materials. National Fire Protection Association publication #55, "Standard for the Storage, Use and Handling of Compressed and Liquified Gases in Portable Cylinders". Compressed Gas Association publication P-1, "Safe Handling of Compressed Gases in Containers". Store and handle in accordance with current regulations and standards: OSHA 29 CFR 1910.101

**Part 8: Exposure Controls, Personal Protection**

EXPOSURE LIMITS: CARBON DIOXIDE, GAS: CARBON DIOXIDE: 5000 ppm (9000 mg/m3) OSHA TWA 10000 ppm (18000 mg/m3) OSHA TWA (vacated by 58 FR 35338, June 30, 1993) 30000 ppm (54000 mg/m3) OSHA STEL (vacated by 58 FR 35338, June 30, 1993) 5000 ppm ACGIH TWA 30000 ppm ACGIH STEL 5000 ppm (9000 mg/m3) NIOSH recommended TWA 10 hour(s) 30000 ppm (54000 mg/m3) NIOSH recommended STEL 9100 mg/m3 (5000 ml/m3) DFG MAK (peak limitation category-IV) 9000 mg/m3 (5000 ml/m3) EC MAK 5000 ppm (9150 mg/m3) UK OES TWA 15000 ppm (27400 mg/m3) UK OES STEL

MEASUREMENT METHOD: Gas collection bag; Gas chromatography with thermal conductivity detection; NIOSH IV # 6603

VENTILATION: Based on available information, additional ventilation is not required. Ensure compliance with applicable exposure limits.

EYE PROTECTION: Eye protection not required, but recommended.

CLOTHING: For the gas: Protective clothing is not required. For the liquid: Wear appropriate protective, cold insulating clothing.

GLOVES: Protective gloves are not required, but recommended.

RESPIRATOR: The following respirators and maximum use concentrations are drawn from NIOSH and/or OSHA. 40,000 ppm Any supplied-air respirator. Any self-contained breathing apparatus with a full facepiece. Escape - Any appropriate escape-type, self-contained breathing apparatus. For Unknown Concentrations or Immediately Dangerous to Life or Health - Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full facepiece

**Part 9: Physical and Chemical Properties**

PHYSICAL DESCRIPTION: Colorless, odorless gas, with a slight acidic taste.

MOLECULAR WEIGHT: 44.01
MOLECULAR FORMULA: C-O2
BOILING POINT: Not available
FREEZING POINT: -71 F (-57 C) @ 4000 mmHg
SUBLIMATION POINT: -110 F (-79 C)
VAPOR PRESSURE: 43700 mmHg @ 21 C
VAPOR DENSITY (air=1): 1.5
SPECIFIC GRAVITY (water=1): 1.522 @ 21 C
WATER SOLUBILITY: soluble
PH: acidic in solution
VOLATILITY: Not applicable
ODOR THRESHOLD: Not available
EVAPORATION RATE: Not applicable
COEFFICIENT OF WATER/OIL DISTRIBUTION: Not applicable
SOLVENT SOLUBILITY: Soluble: alcohol, acetone, hydrocarbons, organic solvents

**Part 10: Stability and Reactivity**

REACTIVITY: Stable at normal temperatures and pressure.

CONDITIONS TO AVOID: Protect from physical damage and heat. Containers may rupture or explode if exposed to heat. Avoid contact with water or moisture.

INCOMPATIBILITIES: combustible materials, oxidizing materials, metal salts, reducing agents, metal carbide, metals, bases CARBON DIOXIDE: ACRYLALDEHYDE: Exothermic polymerization. BARIUM PEROXIDE: Incandescent reaction. CESIUM OXIDE: Ignition. DIETHYL MAGNESIUM: Ignition. ETHYLENEIMINE: Explosive polymerization. HYDRAZINE: Decomposition. METAL ACETYLIDES: Ignition or incandescence. METAL HYDRIDES: Reduction reaction. METALS: Dusts of many metals suspended in carbon dioxide atmospheres are ignitable and explosive; some bulk metals will burn in the gas at elevated temperatures. POTASSIUM: Mixtures of the solids are impact-sensitive. POTASSIUM-SODIUM ALLOY: Mixtures of the solids are impact-sensitive. SODIUM: Mixtures of the solids are impact-sensitive. SODIUM PEROXIDE: Highly exothermic reaction; may be explosive in the presence of metals.

POLYMERIZATION: Will not polymerize.

**Part 11: Toxicological Information**

ACARBON DIOXIDE, GAS: TOXICITY DATA: 9 pph/5 minute(s) inhalation-human LCLo; 90000 ppm/5 minute(s) inhalation-mammal LCLo; 10000 ppm/24 hour(s)-30 day(s) continuous inhalation-rat TCLo; 27000 ppm/24 hour(s)-30 day(s) continuous inhalation-rabbit TCLo

ACUTE TOXICITY LEVEL: Insufficient Data.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: heart or cardiovascular disorders, respiratory disorders

REPRODUCTIVE EFFECTS DATA: 6 pph inhalation-rat TCLo/24 hour(s) 10 day(s) pregnant female continuous; 6 pph inhalation-rat TCLo/24 hour(s) 10 day(s) pregnant female continuous; 55 pph inhalation-mouse TCLo/2 hour(s) 3 day(s) male; 55 pph inhalation-mouse TCLo/4 hour(s) 6 day(s) male; 2 pph inhalation-mouse TCLo/8 hour(s) 10 day(s) pregnant female continuous; 13 pph inhalation-rabbit TCLo/4 hour(s) 9-12 day(s) pregnant female continuous

HEALTH EFFECTS: INHALATION: ACUTE EXPOSURE: CARBON DIOXIDE: In the solid or liquid form carbon dioxide is very volatile, readily releasing the gas. At concentrations from 2-10% it may cause acidic taste, dyspnea, headache, vertigo, nausea, labored breathing, weakness, drowsiness, mental confusion, and increase in blood pressure, pulse, and respiratory rate. Exposure to 10% for a few minutes has been reported to cause visual disturbances, tinnitus, tremors, profuse perspiration, restlessness, paresthesias, general feeling of discomfort, loss of consciousness, and coma. Concentrations of 25-30% may cause coma and convulsions within one minute. Tachycardia and arrhythmias are possible. Concentrations of 50% may cause symptoms of hypocalcemia including carpopedal spasms. Excessive carbon dioxide for a time period of not more than 5 minutes was reported to

cause effects on vision with constriction of visual fields, enlargement of blind spots, photophobia, loss of convergence and accommodation, and deficient dark adaptation as well as headache, insomnia, and personality changes, largely depression and irritability. Even when there is sufficient oxygen present to prevent simple asphyxiation by carbon dioxide, high concentrations may cause adverse effects by interfering with its normal elimination from the body. Initially, exposure to increased carbon dioxide concentrations results in a compensatory increase in both rate and depth of ventilation. Beyond a certain point, however, this may reverse to hypoventilation resulting in respiratory acidosis. Death from asphyxia may occur if the concentration and duration of exposure are sufficient. Reproductive effects have been reported in animals.

CHRONIC EXPOSURE: CARBON DIOXIDE: It has been reported that persons may tolerate 1.5% in inhaled air for prolonged periods without adverse effects, but calcium/phosphorus metabolism may be affected with serum levels of calcium and urinary phosphorus progressively falling. At 2% concentration, deepened respiration may occur. At 3% impairment of performance has been noted. It has, however, been demonstrated that the development of tolerance may occur during prolonged exposure to low levels. Reproductive effects have been reported in animals.

SKIN CONTACT: ACUTE EXPOSURE: CARBON DIOXIDE: No adverse effects have been reported from exposure to the gas. Due to rapid evaporation, the liquid or solid may cause frostbite with redness, tingling and pain or numbness. In more severe cases, the skin may become hard and white and develop blisters.

CHRONIC EXPOSURE: CARBON DIOXIDE: No adverse effects are expected from exposure at low levels.

EYE CONTACT: ACUTE EXPOSURE: CARBON DIOXIDE: At high concentrations in air, carbon dioxide may cause a stinging sensation of the eyes. 200,000 ppm of the gas may cause irritation. Due to rapid evaporation, the liquid or solid may cause frostbite with redness, pain, and blurred vision.

CHRONIC EXPOSURE: CARBON DIOXIDE: No adverse effects are expected from exposure to low levels.

INGESTION: ACUTE EXPOSURE: CARBON DIOXIDE: Ingestion of a gas is unlikely. If the liquid or solid is swallowed, frostbite damage to the lips, mouth and mucous membranes may occur.

CHRONIC EXPOSURE: CARBON DIOXIDE: No data available

**Part 12: Ecological Information**

ECOTOXICITY DATA: FISH TOXICITY: 150000 ug/L 48 day(s) (Mortality) Brown trout (Salmo trutta)

**Part 13: Disposal Consideration**

Dispose in accordance with all applicable regulations.

**Part 14: Transport Information**

U.S. DOT 49 CFR 172.101: PROPER SHIPPING NAME: Carbon dioxide
ID NUMBER: UN1013
HAZARD CLASS OR DIVISION: 2.2
LABELING REQUIREMENTS: Nonflammable gas
PACKAGING AUTHORIZATIONS: EXCEPTIONS: 49
CFR 173.306 NON-BULK PACKAGING: 49
CFR 173.302, 304 BULK PACKAGING: 49
CFR 173.302, 314, 315
QUANTITY LIMITATIONS: PASSENGER AIRCRAFT OR RAILCAR: 75 kg CARGO AIRCRAFT ONLY: 150 kg
LAND TRANSPORT ADR/RID: SUBSTANCE NAME: Carbon dioxide UN NUMBER: UN1013
ADR/RID CLASS: 2
ITEM NUMBER: 5(a)/2A
WARNING SIGN/LABEL: 2/2; 13
HAZARD ID NUMBER: 20

AIR TRANSPORT IATA/ICAO: PROPER SHIPPING NAME: Carbon dioxide
UN/ID NUMBER: UN1013
IATA/ICAO CLASS: 2.2
LABEL: Nonflammable gas
MARITIME TRANSPORT IMDG: CORRECT TECHNICAL NAME: Carbon dioxide
UN/ID NUMBER: UN1013 IMDG CLASS: 2(2.2)
EmS No.: 2-09
MFAG Table No.: 615
IMDG CODE PAGE: 2111

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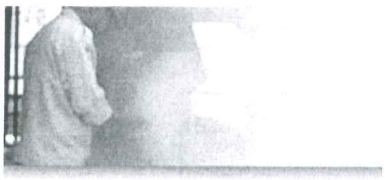

**Oxygen Gas**

**MSDS**

- Nitrogen Liquid
- Oxygen Liquid
- Argon Liquid
- Hydrogen Liquid
- Carbon dioxide Liquid
- Helium Liquid
- Acetylene Gas
- Argon Gas
- Carbon dioxide Gas
- Helium Gas
- Hydrogen Gas
- Nitrogen Gas
- Oxygen Gas
- Nitrous oxide
- Propane
- Compressed Air
- Carbon Monoxide
- Ethylene
- Ammonia

SAI GLOBAL

## Part 1: Chemical Product and Company Identification

SUBSTANCE: OXYGEN, COMPRESSED GAS
TRADE NAMES/SYNONYMS: OXYGEN; DIOXYGEN; MOLECULAR OXYGEN; OXYGEN MOLECULE; PURE OXYGEN; STCC 4904350; UN 1072; O2; RTECS RS2060000
CHEMICAL FAMILY: inorganic, gas
COMPANY: PT ANEKA GAS INDUSTRI
Wisma 77 Lt.6 Jl. S. Parman Kav.77, Jakarta Barat 11410
PHONE: 62-21 53670071
Creation date: 12 December 2005

## Part 2: Composition, Information on ingredients

COMPONENT: OXYGEN, COMPRESSED GAS CAS NUMBER: 7782-44-7 EC NUMBER (EINECS): 231-956-9 EC INDEX NUMBER: 008-001-00-8 PERCENTAGE: 100.0

## Part 3: Hazards Identifications

NFPA RATINGS (SCALE 0-4): HEALTH=0 FIRE=0 REACTIVITY=0 EMERGENCY OVERVIEW: PHYSICAL DESCRIPTION: Odorless, colorless, tasteless, gas. MAJOR HEALTH HAZARDS: No significant target effects reported. PHYSICAL HAZARDS: Containers may rupture or explode if exposed to heat. May ignite combustibles. POTENTIAL HEALTH EFFECTS: INHALATION: SHORT TERM EXPOSURE: irritation, changes in body temperature, nausea, difficulty breathing, irregular heartbeat, dizziness, disorientation, hallucinations, mood swings, pain in extremities, tremors, lung congestion, convulsions LONG TERM EXPOSURE: irritation, chest pain, lung damage SKIN CONTACT: SHORT TERM EXPOSURE: no information on significant adverse effects LONG TERM EXPOSURE: no information on significant adverse effects EYE CONTACT: SHORT TERM EXPOSURE: irritation LONG TERM EXPOSURE: no information on significant adverse effects INGESTION: SHORT TERM EXPOSURE: no information on significant adverse effects LONG TERM EXPOSURE: no information is available CARCINOGEN STATUS: OSHA: No NTP: No IARC: No

## Part 4: First Aid Measures

INHALATION: If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. Get immediate medical attention. SKIN CONTACT: If frostbite or freezing occur, immediately flush with plenty of lukewarm water (105-115 F; 41-46 C). DO NOT USE HOT WATER. If warm water is not available, gently wrap affected parts in blankets. Get immediate medical attention. EYE CONTACT: Wash eyes immediately with large amounts of water, occasionally lifting upper and lower lids, until no evidence of chemical remains. Get medical attention immediately. INGESTION: If a large amount is swallowed, get medical attention.

## Part 5: Fire Fighting Measures

FIRE AND EXPLOSION HAZARDS: Negligible fire hazard. Oxidizer. May ignite or explode on contact with combustible materials. Containers may rupture or explode if exposed to heat. EXTINGUISHING MEDIA: carbon dioxide, regular dry chemical Large fires: Use regular foam or flood with fine water spray. FIRE FIGHTING: Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Stay away

from the ends of tanks. For fires in cargo or storage area: Cool containers with water from unmanned hose holder or monitor nozzles until well after fire is out. If this is impossible then take the following precautions: Keep unnecessary people away, isolate hazard area and deny entry. Let the fire burn. Use extinguishing agents appropriate for surrounding fire. Cool containers with water. Apply water from a protected location or from a safe distance.

**Part 6: Accidental Release Measures**

OCCUPATIONAL RELEASE: Stop leak if possible without personal risk. Avoid contact with combustible materials. Keep unnecessary people away, isolate hazard area and deny entry. Ventilate closed spaces before entering.

**Part 7: Handling and Storage**

Storage: store and handle in accordance with all current regulations and standards.

**Part 8: Exposure Controls, Personal Protection**

EXPOSURE LIMITS: OXYGEN, COMPRESSED GAS: No occupational exposure limits established. VENTILATION: Provide local exhaust ventilation system. Ensure compliance with applicable exposure limits. EYE PROTECTION: Eye protection not required, but recommended. CLOTHING: Protective clothing is not required. GLOVES: Protective gloves are not required. RESPIRATOR: Under conditions of frequent use or heavy exposure, respiratory protection may be needed. Respiratory protection is ranked in order from minimum to maximum. Consider warning properties before use. For Unknown Concentrations or Immediately Dangerous to Life or Health - Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full facepiece.

**Part 9: Physical and Chemical Properties**

PHYSICAL DESCRIPTION: Odorless, colorless, tasteless, gas. MOLECULAR WEIGHT: 31.9988 MOLECULAR FORMULA: O2 BOILING POINT: -297 F (-183 C) FREEZING POINT: -360 F (-218 C) VAPOR PRESSURE: 760 mmHg @ -183 C VAPOR DENSITY (air=1): 1.1 SPECIFIC GRAVITY: Not applicable DENSITY: 1.309 g/L @ 25 C WATER SOLUBILITY: 3.2% @ 25 C PH: Not applicable VOLATILITY: Not applicable ODOR THRESHOLD: Not available EVAPORATION RATE: Not applicable VISCOSITY: 0.02075 cP @ 25 C COEFFICIENT OF WATER/OIL DISTRIBUTION: Not applicable SOLVENT SOLUBILITY: Soluble: alcohol

**Part 10: Stability and Reactivity**

REACTIVITY: Stable at normal temperatures and pressure. CONDITIONS TO AVOID: Avoid contact with combustible materials. Protect from physical damage and heat. Containers may rupture or explode if exposed to heat. INCOMPATIBILITIES: combustible materials, halo carbons, metals, bases, reducing agents, amines, metal salts, oxidizing materials OXYGEN: ACETALDEHYDE: Rapid oxidation progressing to explosion. ACETYLENE: Mixtures of the gases may explode on heating or compression; the liquids form a powerful explosive. POLY (ACRYLONITRILE-BUTADIENE): Forms impact-sensitive mixture with the liquid. SEC-ALCOHOLS: Forms explosive peroxides. ALKALI METALS: Ignition. ALKALINE-EARTH METALS: Ignition. ALKALINE-EARTH PHOSPHIDES: Incandescence on heating. ALLYLIC COMPOUNDS: May form explosive peroxides. ALUMINUM BOROHYDRIDE: Explosive reaction. AMMONIA: Possible explosion. BERYLLIUM BOROHYDRIDE: Explosive reaction. BORON ARSENOTRIBROMIDE: Ignites on contact with the gas. BORON TRICHLORIDE: Vigorous reaction on sparking. BUTEN-3-YNE: Forms explosive peroxides. CARBON: May ignite in the gas; forms explosive mixtures with the liquid. CARBON DISULFIDE: Possible ignition. CARBON MONOXIDE (LIQUID): Forms explosive mixture with the liquid. CHLOROTRIFLUOROETHYLENE: Forms explosive peroxides. COMBUSTIBLE MATERIALS: The flammability of combustible compounds greatly increases with an increase in oxygen concentration; some materials may become spontaneously combustible or explosive. Contact of combustible compounds with liquid oxygen is likely to result in a dangerous explosion. CYANOGEN (LIQUID): Forms explosive mixture with the liquid. CYCLOHEXANE-1,2-DIONE BIS(PHENYLHYDRAZONE): Forms explosive compound. CYCLOOCTATETRAENE: May form explosive peroxides. DIBORANE: Explosive mixture on heating. DIBORON TETRAFLUORIDE: Explosive mixture. DIMETHYLKETENE: Forms explosive peroxide. DIMETHYL SULFIDE: Explosive reaction above 210 C. DIOXANE: May form explosive

peroxides. ETHERS: May form explosive peroxides. FLAMMABLE MATERIALS: The flammability of materials greatly increases as the oxygen concentration increases; some compounds may become spontaneously combustible or explosive. Contact with liquid oxygen is likely to result in dangerous explosions. FLUORINE + HYDROGEN: Explosive mixture. HALOGENATED HYDROCARBONS: Many halogenated hydrocarbons ignite or explode with the gas under pressure; contact with the liquid may result in a dangerous explosion. HYDRAZINE: Forms explosive mixtures. HYDROCARBONS: Mixtures with the gas may ignite or explode particularly under pressure or when heated; contact with the liquid is likely to result in a dangerous explosion. HYDROGEN: Explosive mixture, particularly in the presence of a catalyst. HYDROGEN SULFIDE: Explosive mixture. LITHIATED DIALKYLNITROSAMINES: May form explosive compounds. LITHIUM HYDRIDE (POWDER): Very powerful explosive with the liquid. METALS: Many metals ignite or explode in the gas, particularly if heated or in powder form. Contact of metal powders with the liquid is likely to result in a dangerous explosion. METAL HALIDES: Ignition. METAL HYDRIDES: Ignition or explosion. METHANE (LIQUID): Forms explosive mixture with the liquid. METHOXYCYCLOOCTATETRAENE: Forms explosive compound. NICKEL CARBONYL: Ignites or explodes at low pressure. NITROGEN (LIQUID): Explosive if subjected to radiation. NON-METAL HYDRIDES: May ignite or explode. OXYGEN DIFLUORIDE: Explosive mixture. PHENYLDICHLOROAMINE: Explosive reaction. PHOSPHINE: Forms explosive mixture. PHOSPHOROUS: Vigorous reaction. PHOSPHORUS TRIBROMIDE: Explosive reaction. PHOSPHOROUS TRIFLUORIDE: Explosive reaction. PHOSPHOROUS TRIOXIDE: Ignition. POLY(CYANOETHYLSILOXANE): Forms impact sensitive mixture with the liquid. POLY (DIMETHYLSILOXANE): Forms impact sensitive mixture with the liquid. POLYSTYRENE: Forms impact-sensitive mixture with the liquid. POLYMERS: Contact with the liquid may result in rapid, hazardous oxidation with possible explosions. POTASSIUM CARBONYL: Violent reaction. POTASSIUM PEROXIDE: Violent reaction. PROPYLENE OXIDE: Explosive mixture. SILANE + CHLORINE: Explosive mixture. SILANES: Ignition or explosion. STYRENE: Forms explosive peroxide. TEFLON (POLYTETRAFLUOROETHYLENE): Ignites at high temperature and reduced pressure. TETRABORON DECAHYDRIDE: Explosive mixture. TETRAFLUOROETHYLENE: Forms explosive peroxides. TETRAFLUOROHYDRAZINE: Explosion in the presence of organic matter. TETRAHYDROFURAN: Forms explosive peroxides. TETRAPHOSPHORUS HEXAOXIDE: Ignition. TRIRHENIUM CHLORIDE: May form explosive chlorine oxides on heating. VINYL COMPOUNDS: May form explosive peroxides. HAZARDOUS DECOMPOSITION: Thermal decomposition products: miscellaneous decomposition products POLYMERIZATION: Will not polymerize.

**Part 11: Toxicological Information**

OXYGEN, COMPRESSED GAS: TOXICITY DATA: 100 pph/14 hour(s) inhalation-human TCLo; 100 pph/24 hour(s)-3 day(s) continuous inhalation-rat TCLo; 95 pph/24 hour(s)-2 day(s) continuous inhalation-rat TCLo MUTAGENIC DATA: cytogenetic analysis - human lymphocyte 40 pph 4 day(s); cytogenetic analysis - hamster ovary 20 pph 3 day(s)-continuous; cytogenetic analysis - hamster lung 80 pph; sister chromatid exchange - hamster ovary 20 pph; mutation in mammalian somatic cells - hamster lung 95 pph 24 hour(s); cytogenetic analysis - chicken embryo 80 pph REPRODUCTIVE EFFECTS DATA: 12 pph inhalation-woman TCLo/10 minute(s) 26-39 week(s) pregnant female continuous; 10 pph inhalation-rat TCLo/12 hour(s) 22 day(s) pregnant female continuous; 10 pph inhalation-rat TCLo/9 hour(s) 22 day(s) pregnant female continuous; 10 pph inhalation-mouse TCLo/24 hour(s) 8 day(s) pregnant female continuous ADDITIONAL DATA: Toxic action is greatly enhanced by exercise or by presence of moderate amounts of carbon dioxide. OXYGEN, COMPRESSED GAS: TOXICITY DATA: 100 pph/14 hour(s) inhalation-human TCLo; 100 pph/24 hour(s)-3 day(s) continuous inhalation-rat TCLo; 95 pph/24 hour (s)-2 day(s) continuous inhalation-rat TCLo MUTAGENIC DATA: cytogenetic analysis - human lymphocyte 40 pph 4 day(s); cytogenetic analysis - hamster ovary 20 pph 3 day(s)-continuous; cytogenetic analysis - hamster lung 80 pph; sister chromatid exchange - hamster ovary 20 pph; mutation in mammalian somatic cells - hamster lung 95 pph 24 hour(s); cytogenetic analysis - chicken embryo 80 pph REPRODUCTIVE EFFECTS DATA: 12 pph inhalation-woman TCLo/10 minute(s) 26-39 week(s) pregnant female continuous; 10 pph inhalation-rat TCLo/12 hour(s) 22 day(s) pregnant female continuous; 10 pph inhalation-rat TCLo/9 hour(s) 22 day(s) pregnant female continuous; 10 pph inhalation-mouse TCLo/24 hour(s) 8 day(s) pregnant female continuous ADDITIONAL DATA: Toxic action is greatly enhanced by exercise or by presence of moderate amounts of carbon dioxide. HEALTH EFFECTS: INHALATION: ACUTE EXPOSURE: OXYGEN: Pure oxygen,

especially if not properly humidified, may cause mucous membrane irritation and pulmonary edema after 24 hours. Air normally contains 20-21% oxygen. As exposure to higher concentrations and/or greater than atmospheric pressure continues symptoms of toxicity may develop and increase in severity. Respiratory system effects may include a progressive decrease in vital capacity, tightness in the chest and discomfort, coughing, congestion, tracheobronchitis, pneumonia, edema, atelectasis and increased depth of respiration, rapid panting or asthma-like attacks, apnea in inspiratory position, fibroblastic proliferation, and hyperplasia of alveolar cells. Cardiovascular system effects may include bradycardia, hyperthermia or hypothermia and peripheral vasoconstriction. The nervous system may be affected with mood changes, nausea, dizziness, slowing of mental processess, malaise, hilarity, apprehension, paresthesias including tingling of fingers and toes, fasciculation of the lips and face, muscular twitching, visual and auditory hallucinations, general convulsions and epileptic seizures, loss of consciousness and collapse. At increased atmospheric pressures, vision may be affected. Symptoms may include photophobia, amblyopia, mydriasis, bilateral progressive constriction of visual field, impaired central vision, constriction of retinal vasculature, and possible loss of vision. However, no change in the visual fields or visual acuity was found after breathing pure oxygen for four and one-half hours at normal atmospheric pressures. Animal studies indicate exposure to oxygen under high pressure has caused hemolytic anemia. In pregnant women exposed to 100% oxygen for 20 minutes, the response was a fetal cardiac rate which decreased and became variable. CHRONIC EXPOSURE: OXYGEN: Inhalation of pure oxygen for periods up to 16 hours per day for many days at atmospheric pressure has caused no observed injury to man. Administration at atmospheric pressures at concentrations of 60% and 80% may be followed by adverse effects, including severe cough, acute chest pain associated with a decrease in vital capacity, intra-alveolar edema and atelectasis. It is possible that prolonged low-level injury may produce severe fibrotic changes in the lungs. However, after a human was exposed to high concentrations of oxygen for 150 days, severe irreversible retinal atrophy occurred. Dogs exposed to pure oxygen for 48 hours were found to develop retinal and choroidal detachments. Reproductive effects have been reported in animal studies. SKIN CONTACT: ACUTE EXPOSURE: OXYGEN: No adverse effects have been reported from the gas. Due to rapid evaporation, the cryogenic liquid may cause frostbite with redness, tingling and pain or numbness. In more severe cases, the skin may become hard and white and develop blisters. CHRONIC EXPOSURE: OXYGEN: No adverse effects have been reported. EYE CONTACT: ACUTE EXPOSURE: OXYGEN: May cause irritation if not properly humidified. Due to rapid evaporation, the cryogenic liquid may cause frostbite with redness, pain and blurred vision. CHRONIC EXPOSURE: OXYGEN: No adverse effects have been reported. INGESTION: ACUTE EXPOSURE: OXYGEN: Ingestion of a gas is unlikely. If the cryogenic liquid is swallowed, frostbite damage of the lips, mouth and mucous membranes may occur. CHRONIC EXPOSURE: OXYGEN: No data available

**Part 12: Ecological Information**

Not available

**Part 13: Disposal Consideration**

Dispose in accordance with all applicable regulations.

**Part 14: Transport Information**

U.S. DOT 49 CFR 172.101: PROPER SHIPPING NAME: Oxygen, compressed ID NUMBER: UN1072 HAZARD CLASS OR DIVISION: 2.2 LABELING REQUIREMENTS: Nonflammable gas; Oxidizer PACKAGING AUTHORIZATIONS: EXCEPTIONS: 49 CFR 173.306 NON-BULK PACKAGING: 49 CFR 173.302 BULK PACKAGING: 49 CFR 173.314, 315 QUANTITY LIMITATIONS: PASSENGER AIRCRAFT OR RAILCAR: 75 kg CARGO AIRCRAFT ONLY: 150 kg LAND TRANSPORT ADR/RID: SUBSTANCE NAME: Oxygen, compressed UN NUMBER: UN1072 ADR/RID CLASS: 2 ITEM NUMBER: 1(a)/1O WARNING SIGN/LABEL: 2; 05/2; 05; 13 HAZARD ID NUMBER: 20/25 AIR TRANSPORT IATA/ICAO: PROPER SHIPPING NAME: Oxygen, compressed UN/ID NUMBER: UN1072 IATA/ICAO CLASS: 2.2 SUBSIDIARY RISK: 5.1 LABEL: Nonflammable gas; Oxidizer MARITIME TRANSPORT IMDG: CORRECT TECHNICAL NAME: Oxygen, compressed UN/ID NUMBER: UN1072 IMDG CLASS: 2(2.2) SUBSIDIARY RISK LABEL: Oxidizing agent EmS No.: 2-04 MFAG Table No.: none IMDG CODE PAGE: 2169

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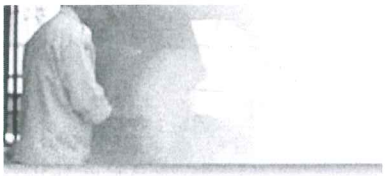

**Propane**

**MSDS**

- Nitrogen Liquid
- Oxygen Liquid
- Argon Liquid
- Hydrogen Liquid
- Carbon dioxide Liquid
- Helium Liquid
- Acetylene Gas
- Argon Gas
- Carbon dioxide Gas
- Helium Gas
- Hydrogen Gas
- Nitrogen Gas
- Oxygen Gas
- Nitrous oxide
- Propane
- Compressed Air
- Carbon Monoxide
- Ethylene
- Ammonia

SA GLOBAL

## Part 1: Chemical Product and Company Identification

SUBSTANCE: PROPANE
TRADE NAMES/SYNONYMS: N-PROPANE; DIMETHYLMETHANE; PROPYL HYDRIDE; R-290; PROPYLHYDRIDE; LIQUEFIED PETROLEUM GAS; LPG; STCC 4905781; UN 1978; C3H8; RTECS TX2275000
CHEMICAL FAMILY: hydrocarbons, aliphati
COMPANY: PT ANEKA GAS INDUSTRI
Wisma 77 Lt.6 Jl. S. Parman Kav.77, Jakarta Barat 11410
PHONE: 62-21 53670071
Creation date: 12 December 2005

## Part 2: Composition, Information on ingredients

COMPONENT: PROPANE CAS NUMBER: 74-98-6 EC NUMBER (EINECS): 200-827-9 EC INDEX NUMBER: 601-003-00-5 PERCENTAGE: 100

## Part 3: Hazards Identifications

NFPA RATINGS (SCALE 0-4): HEALTH=1 FIRE=4 REACTIVITY=0 EMERGENCY OVERVIEW: PHYSICAL DESCRIPTION: Colorless gas with a characteristic natural gas odor. MAJOR HEALTH HAZARDS: central nervous system depression, difficulty breathing PHYSICAL HAZARDS: Flammable gas. May cause flash fire. POTENTIAL HEALTH EFFECTS: INHALATION: SHORT TERM EXPOSURE: nausea, vomiting, irregular heartbeat, headache, symptoms of drunkenness, disorientation, suffocation, convulsions, coma LONG TERM EXPOSURE: same as effects reported in short term exposure SKIN CONTACT: SHORT TERM EXPOSURE: blisters, frostbite LONG TERM EXPOSURE: no information on significant adverse effects EYE CONTACT: SHORT TERM EXPOSURE: frostbite, blurred vision LONG TERM EXPOSURE: no information is available INGESTION: SHORT TERM EXPOSURE: frostbite LONG TERM EXPOSURE: no information is available CARCINOGEN STATUS: OSHA: No NTP: No IARC: No

## Part 4: First Aid Measures

INHALATION: If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention. SKIN CONTACT: If frostbite or freezing occur, immediately flush with plenty of lukewarm water (105-115 F; 41-46 C). DO NOT USE HOT WATER. If warm water is not available, gently wrap affected parts in blankets. Get immediate medical attention. EYE CONTACT: Flush eyes with plenty of water. INGESTION: If a large amount is swallowed, get medical attention. NOTE TO PHYSICIAN: For inhalation, consider oxygen.

## Part 5: Fire Fighting Measures

FIRE AND EXPLOSION HAZARDS: Severe fire hazard. Severe explosion hazard. Vapor/air mixtures are explosive. The vapor is heavier than air. Vapors or gases may ignite at distant ignition sources and flash back. Electrostatic discharges may be generated by flow or agitation resulting in ignition or explosion. EXTINGUISHING MEDIA: carbon dioxide, regular dry chemical Large fires: Flood with fine water spray. FIRE FIGHTING: Move container from

fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Stay away from the ends of tanks. For fires in cargo or storage area: Cool containers with water from unmanned hose holder or monitor nozzles until well after fire is out. If this is impossible then take the following precautions: Keep unnecessary people away, isolate hazard area and deny entry. Let the fire burn. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. For tank, rail car or tank truck: Stop leak if possible without personal risk. Let burn unless leak can be stopped immediately. For smaller tanks or cylinders, extinguish and isolate from other flammables. Evacuation radius: 800 meters (1/2 mile). Stop flow of gas. FLASH POINT: -157 F (-105 C) LOWER FLAMMABLE LIMIT: 2.1% UPPER FLAMMABLE LIMIT: 9.5% AUTOIGNITION: 842 F (450 C).

**Part 6: Accidental Release Measures**

OCCUPATIONAL RELEASE: Avoid heat, flames, sparks and other sources of ignition. Do not touch spilled material. Stop leak if possible without personal risk. Reduce vapors with water spray. Keep unnecessary people away, isolate hazard area and deny entry. Remove sources of ignition. Ventilate closed spaces before entering.

**Part 7: Handling and Storage**

STORAGE: Store and handle in accordance with all current regulations and standards. Subject to storage regulations: U.S. OSHA 29 CFR 1910.110. Grounding and bonding required. Keep separated from incompatible substances.

**Part 8: Exposure Controls, Personal Protection**

EXPOSURE LIMITS: PROPANE: 1000 ppm (1800 mg/m3) OSHA TWA 2500 ppm ACGIH TWA 1000 ppm (1800 mg/m3) NIOSH recommended TWA 10 hour(s) 1800 mg/m3 (1000 ml/m3) DFG MAK (peak limitation category-IV) MEASUREMENT METHOD: Combustible gas meter; NIOSH II(2) # S87 LIQUIFIED PETROLEUM GAS (LPG): 1000 ppm (1800 mg/m3) OSHA TWA 1000 ppm ACGIH TWA 1000 ppm (1800 mg/m3) NIOSH recommended TWA 10 hour(s) 1000 ppm (1750 mg/m3) UK OES TWA 1250 ppm (2180 mg/m3) UK OES STEL MEASUREMENT METHOD: Combustible gas meter; NIOSH II(2) # S93 VENTILATION: Provide local exhaust ventilation system. Ventilation equipment should be explosion-resistant if explosive concentrations of material are present. Ensure compliance with applicable exposure limits. EYE PROTECTION: Wear splash resistant safety goggles with a faceshield. Provide an emergency eye wash fountain and quick drench shower in the immediate work area. CLOTHING: For the gas: Protective clothing is not required. For the liquid: Wear appropriate protective, cold insulating clothing. GLOVES: Wear insulated gloves. RESPIRATOR: The following respirators and maximum use concentrations are drawn from NIOSH and/or OSHA. 2100 ppm Any supplied-air respirator. Any self-contained breathing apparatus with a full facepiece. Escape - Any appropriate escape-type, self-contained breathing apparatus. For Unknown Concentrations or Immediately Dangerous to Life or Health - Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full facepiece.

**Part 9: Physical and Chemical Properties**

PHYSICAL DESCRIPTION: Colorless gas with a characteristic natural gas odor. MOLECULAR WEIGHT: 44.11 MOLECULAR FORMULA: C-H3-C-H2-C-H3 BOILING POINT: -44 F (-42 C) FREEZING POINT: -310 F (-190 C) VAPOR PRESSURE: 6536 mmHg @ 20 C VAPOR DENSITY (air=1): 1.55 SPECIFIC GRAVITY (water=1): 0.5853 @ -45 C WATER SOLUBILITY: very slightly soluble PH: Not applicable VOLATILITY: Not applicable ODOR THRESHOLD: 5000-20000 ppm EVAPORATION RATE: Not applicable COEFFICIENT OF WATER/OIL DISTRIBUTION: Not applicable SOLVENT SOLUBILITY: Soluble: absolute alcohol, ether, chloroform, benzene, turpentine

**Part 10: Stability and Reactivity**

REACTIVITY: Stable at normal temperatures and pressure. CONDITIONS TO AVOID: Avoid heat, flames, sparks and other sources of ignition. Minimize contact with material. Containers may rupture or explode if exposed to heat. INCOMPATIBILITIES: oxidizing materials, combustible materials PROPANE: BARIUM PEROXIDE: Violent exothermic reaction. CHLORINE DIOXIDE: Spontaneous explosion. PLASTICS, RUBBER, COATINGS:

Attacked by liquid propane. OXIDIZERS (STRONG): Fire and explosion hazard. HAZARDOUS DECOMPOSITION: Thermal decomposition products: oxides of carbon POLYMERIZATION: Will not polymerize.

**Part 11: Toxicological Information**

PROPANE: TARGET ORGANS: central nervous system ADDITIONAL DATA: Stimulants such as epinephrine may induce ventricular fibrillation. HEALTH EFFECTS: INHALATION: ACUTE EXPOSURE: PROPANE: Brief exposure to 10,000 ppm caused no symptoms in human subjects; 100,000 ppm produced slight dizziness in a few minutes but was not noticeably irritating to the nose or respiratory tract. High levels may produce disorientation, excitation, excessive salivation, headache and vomiting. In primates, 100,000 ppm produced some myocardial effects and at 200,000 ppm aggravation of these parameters and respiratory depression. Concentations of 100,000 ppm in mice and 150,000 ppm in dogs appear to produce no arrhythmia but weak cardiac sensitization. Simple asphyxiants at concentrations of 33% may cause rapid respiration, dyspnea and reduced mental alertness and muscle coordination. Concentrations of 75% may produce nausea, vomiting, prostration, unconsciousness, convulsions, deep coma and death. CHRONIC EXPOSURE: PROPANE: Repeated contact may result in symptoms as described in acute exposure. SKIN CONTACT: ACUTE EXPOSURE: PROPANE: No adverse effects have been reported from the gas. Due to rapid evaporation, the liquid may cause frostbite with redness, tingling and pain or numbness. In more severe cases, the skin may become hard and white and develop blisters. CHRONIC EXPOSURE: PROPANE: No adverse effects reported. EYE CONTACT: ACUTE EXPOSURE: PROPANE: Vapor concentrations of 100,000 ppm were not noticeably irritating to the eyes. Due to rapid evaporation, the liquid may cause frostbite with redness, pain and blurred vision. CHRONIC EXPOSURE: PROPANE: No data available. INGESTION: ACUTE EXPOSURE: PROPANE: Ingestion of a gas is unlikely. If the liquid is swallowed, frostbite damage of the lips, mouth and mucous membranes may occur. CHRONIC EXPOSURE: PROPANE: No data available

**Part 12: Ecological Information**

Not available

**Part 13: Disposal Consideration**

Dispose in accordance with all applicable regulations.

**Part 14: Transport Information**

U.S. DOT 49 CFR 172.101: PROPER SHIPPING NAME: Propane see also Petroleum gases, liquefied. ID NUMBER: UN1978 HAZARD CLASS OR DIVISION: 2.1 LABELING REQUIREMENTS: Flammable gas PACKAGING AUTHORIZATIONS: EXCEPTIONS: 49 CFR 173.306 NON-BULK PACKAGING: 49 CFR 173.304 BULK PACKAGING: 49 CFR 173.314, 315 QUANTITY LIMITATIONS: PASSENGER AIRCRAFT OR RAILCAR: Forbidden CARGO AIRCRAFT ONLY: 150 kg LAND TRANSPORT ADR/RID: SUBSTANCE NAME: Propane, technically-pure/Propane, technically pure UN NUMBER: UN1978 ADR/RID CLASS: 2 ITEM NUMBER: 3 (b)/2F WARNING SIGN/LABEL: 3/3; 13 HAZARD ID NUMBER: 23 AIR TRANSPORT IATA/ICAO: No classification assigned. MARITIME TRANSPORT IMDG: CORRECT TECHNICAL NAME: Propane UN/ID NUMBER: UN1978 IMDG CLASS: 2(2.1) EmS No.: 2-07 MFAG Table No.: 310 IMDG CODE PAGE: 2147

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# Material Safety Data Sheet



## 1. MATERIAL AND COMPANY IDENTIFICATION

**Material Name** : **Retinax Grease LX 2**
**Uses** : Automotive and industrial grease.

**Manufacturer/Supplier** : **SOPUS Products**
PO Box 4427
Houston, TX 77210-4427
USA
**MSDS Request** : 877-276-7285

**Emergency Telephone Number**
**Spill Information** : 877-242-7400
**Health Information** : 877-504-9351

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

The highly refined mineral oil contains <3% (w/w) DMSO-extract, according to IP346.
A lubricating grease consisting of highly-refined mineral oil and additives.

## 3. HAZARDS IDENTIFICATION

**Emergency Overview**

**Appearance and Odour** : Red. Semi-solid. Slight hydrocarbon.

**Health Hazards** : High-pressure injection under the skin may cause serious damage including local necrosis.
**Safety Hazards** : Not classified as flammable but will burn.
**Environmental Hazards** : Not classified as dangerous for the environment.

**Health Hazards** : Not expected to be a health hazard when used under normal conditions.

**Health Hazards**
**Inhalation** : Under normal conditions of use, this is not expected to be a primary route of exposure.
**Skin Contact** : Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.
**Eye Contact** : May cause slight irritation to eyes.
**Ingestion** : Low toxicity if swallowed.
**Other Information** : High-pressure injection under the skin may cause serious damage including local necrosis. Used grease may contain harmful impurities.
**Signs and Symptoms** : Local necrosis is evidenced by delayed onset of pain and tissue damage a few hours following injection. 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.

| | | |
|---|---|---|
| **Aggravated Medical Condition** | : | Pre-existing medical conditions of the following organ(s) or organ system(s) may be aggravated by exposure to this material: Skin. |
| **Environmental Hazards** | : | Not classified as dangerous for the environment. |
| **Additional Information** | : | 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. |

## 4. FIRST AID MEASURES

| | | |
|---|---|---|
| **General Information** | : | Not expected to be a health hazard when used under normal conditions. |
| **Inhalation** | : | No treatment necessary under normal conditions of use. If symptoms persist, obtain medical advice. |
| **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. When using high pressure equipment, injection of product under the skin can occur. If high pressure injuries occur, the casualty should be sent immediately to a hospital. Do not wait for symptoms to develop. Obtain medical attention even in the absence of apparent wounds. |
| **Eye Contact** | : | Flush eye with copious quantities of water. If persistent irritation occurs, obtain medical attention. |
| **Ingestion** | : | In general no treatment is necessary unless large quantities are swallowed, however, get medical advice. |
| **Advice to Physician** | : | Treat symptomatically. High pressure injection injuries require prompt surgical intervention and possibly steroid therapy, to minimise tissue damage and loss of function. Because entry wounds are small and do not reflect the seriousness of the underlying damage, surgical exploration to determine the extent of involvement may be necessary. Local anaesthetics or hot soaks should be avoided because they can contribute to swelling, vasospasm and ischaemia. Prompt surgical decompression, debridement and evacuation of foreign material should be performed under general anaesthetics, and wide exploration is essential. |

## 5. FIRE FIGHTING MEASURES

Clear fire area of all non-emergency personnel.

| | | |
|---|---|---|
| **Flash point** | : | > 150 °C / 302 °F (COC) |
| **Upper / lower Flammability or Explosion limits** | : | Typical 1 - 10 %(V)(based on mineral oil) |
| **Auto ignition temperature** | : | > 320 °C / 608 °F |
| **Specific Hazards** | : | Hazardous combustion products may include: A complex mixture of airborne solid and liquid particulates and gases (smoke). Carbon monoxide. Unidentified organic and inorganic compounds. |

| | | |
|---|---|---|
| **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. |
| **Protective Equipment for Firefighters** | : | Proper protective equipment including breathing apparatus must be worn when approaching a fire in a confined space. |

## 6. ACCIDENTAL RELEASE MEASURES

Avoid contact with spilled or released material. For guidance on selection of personal protective equipment see Chapter 8 of this Material Safety Data Sheet. See Chapter 13 for information on disposal. Observe all relevant local and international regulations.

| | | |
|---|---|---|
| **Protective measures** | : | Avoid contact with skin and eyes. Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers. |
| **Clean Up Methods** | : | Shovel into a suitable clearly marked container for disposal or reclamation in accordance with local regulations. |

## 7. HANDLING AND STORAGE

| | | |
|---|---|---|
| **General Precautions** | : | Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols. Properly dispose of any contaminated rags or cleaning materials in order to prevent fires. 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. |
| **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. |
| **Storage** | : | Keep container tightly closed and in a cool, well-ventilated place. Use properly labelled and closeable containers. Storage Temperature: 0 - 50 °C / 32 - 122 °F |
| **Recommended Materials** | : | For containers or container linings, use mild steel or high density polyethylene. |
| **Unsuitable Materials** | : | PVC. |
| **Additional Information** | : | Polyethylene containers should not be exposed to high temperatures because of possible risk of distortion. |

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Occupational Exposure Limits**

| Material | Source | Type | ppm | mg/m3 | Notation |
|---|---|---|---|---|---|
| Oil mist, mineral | ACGIH | TWA(Mist.) | | 5 mg/m3 | |
| Oil mist, mineral | ACGIH | STEL(Mist.) | | 10 mg/m3 | |

| | | |
|---|---|---|
| **Additional Information** | : | Due to the product's semi-solid consistency, generation of mists and dusts is unlikely to occur. |
| **Exposure Controls** | : | 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. |
| **Personal Protective Equipment** | : | Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers. |
| **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 combined particulate/organic gases and vapours [boiling point >65 °C (149 °F)]. |
| **Hand Protection** | : | 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, glove thickness, 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. |
| **Eye Protection** | : | Wear safety glasses or full face shield if splashes are likely to occur. |
| **Protective Clothing** | : | Skin protection not ordinarily required beyond standard issue work clothes. |
| **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. |
| **Environmental Exposure Controls** | : | Minimise release to the environment. An environmental assessment must be made to ensure compliance with local environmental legislation. |

## 9. PHYSICAL AND CHEMICAL PROPERTIES

| | | |
|---|---|---|
| Appearance | : | Red. Semi-solid. |
| Odour | : | Slight hydrocarbon. |
| pH | : | Not applicable. |
| Initial Boiling Point and Boiling Range | : | Data not available |
| Dropping point | : | > 245 °C / 473 °F |
| Flash point | : | > 150 °C / 302 °F (COC) |
| Upper / lower Flammability or Explosion limits | : | Typical 1 - 10 %(V) (based on mineral oil) |
| Auto-ignition temperature | : | > 320 °C / 608 °F |
| Vapour pressure | : | < 0.5 Pa at 20 °C / 68 °F (estimated value(s)) |
| Density | : | Typical 900 kg/m3 at 15 °C / 59 °F |
| Water solubility | : | Negligible. |
| n-octanol/water partition coefficient (log Pow) | : | > 6 (based on information on similar products) |
| Kinematic viscosity | : | Not applicable. |
| Vapour density (air=1) | : | > 1 (estimated value(s)) |
| Evaporation rate (nBuAc=1) | : | Data not available |

## 10. STABILITY AND REACTIVITY

| | | |
|---|---|---|
| **Stability** | : | Stable. |
| **Conditions to Avoid** | : | Extremes of temperature and direct sunlight. |
| **Materials to Avoid** | : | Strong oxidising agents. |
| **Hazardous Decomposition Products** | : | Hazardous decomposition products are not expected to form during normal storage. |

## 11. TOXICOLOGICAL INFORMATION

| | | |
|---|---|---|
| **Basis for Assessment** | : | Information given is based on data on the components and the toxicology of similar products. |
| **Acute Oral Toxicity** | : | Expected to be of low toxicity: LD50 > 5000 mg/kg , Rat |
| **Acute Dermal Toxicity** | : | Expected to be of low toxicity: LD50 > 5000 mg/kg , Rabbit |
| **Acute Inhalation Toxicity** | : | Not considered to be an inhalation hazard under normal conditions of use. |
| **Skin Irritation** | : | Expected to be slightly irritating. Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis. |
| **Eye Irritation** | : | Expected to be slightly irritating. |
| **Respiratory Irritation** | : | Inhalation of vapours or mists may cause irritation. |
| **Sensitisation** | : | Not expected to be a skin sensitiser. |
| **Repeated Dose Toxicity** | : | Not expected to be a hazard. |
| **Mutagenicity** | : | Not considered a mutagenic hazard. |
| **Carcinogenicity** | : | 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). Other components are not known to be associated with carcinogenic effects. |
| **Reproductive and Developmental Toxicity** | : | Not expected to be a hazard. |

| | | |
|---|---|---|
| **Additional Information** | : | Used grease may contain harmful impurities that have accumulated during use. The concentration of such harmful impurities will depend on use and they may present risks to health and the environment on disposal. ALL used grease should be handled with caution and skin contact avoided as far as possible. High pressure injection of product into the skin may lead to local necrosis if the product is not surgically removed. |

## 12. ECOLOGICAL INFORMATION

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.

| | | |
|---|---|---|
| **Acute Toxicity** | : | Poorly soluble mixture. May cause physical fouling of aquatic organisms. Expected to be practically non toxic: LL/EL/IL50 > 100 mg/l (to aquatic organisms) (LL/EL50 expressed as the nominal amount of product required to prepare aqueous test extract). Mineral oil is not expected to cause any chronic effects to aquatic organisms at concentrations less than 1 mg/l. |
| **Mobility** | : | Semi-solid under most environmental conditions. Floats on water. If it enters soil, it will adsorb to soil particles and will not be mobile. |
| **Persistence/degradability** | : | Expected to be not readily biodegradable. Major constituents are expected to be inherently biodegradable, but the product contains components that may persist in the environment. |
| **Bioaccumulation** | : | Contains components with the potential to bioaccumulate. |
| **Other Adverse Effects** | : | Product is a mixture of non-volatile components, which are not expected to be released to air in any significant quantities. Not expected to have ozone depletion potential, photochemical ozone creation potential or global warming potential. |

## 13. DISPOSAL CONSIDERATIONS

| | | |
|---|---|---|
| **Material Disposal** | : | 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. |
| **Container Disposal** | : | Dispose in accordance with prevailing regulations, preferably to a recognised collector or contractor. The competence of the collector or contractor should be established beforehand. |
| **Local Legislation** | : | Disposal should be in accordance with applicable regional, national, and local laws and regulations. |

## 14. TRANSPORT INFORMATION

**US Department of Transportation Classification (49CFR)**

This material is not subject to DOT regulations under 49 CFR Parts 171-180.

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

**IATA (Country variations may apply)**
This material is not classified as dangerous under IATA regulations.

## 15. REGULATORY INFORMATION

The regulatory information is not intended to be comprehensive. Other regulations may apply to this material.

### Federal Regulatory Status

**Notification Status**

| | |
|---|---|
| EINECS | All components listed or polymer exempt. |
| TSCA | All components listed. |
| DSL | All components listed. |

**Comprehensive Environmental Release, Compensation & Liability Act (CERCLA)**

| | |
|---|---|
| Retinax Grease LX 2 () | Reportable quantity: 57 lbs |
| Zinc alkyl dithiophosphate (68649-42-3) | |

**SARA Hazard Categories (311/312)**
No SARA 311/312 Hazards.

**SARA Toxic Release Inventory (TRI) (313)**

| | |
|---|---|
| Zinc alkyl dithiophosphate (68649-42-3) | 1.75% |

### State Regulatory Status

**California Safe Drinking Water and Toxic Enforcement Act (Proposition 65)**

This material does not contain any chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

**New Jersey Right-To-Know Chemical List**

| | |
|---|---|
| Zinc alkyl dithiophosphate (68649-42-3) | Listed. |

## 16. OTHER INFORMATION

| | | |
|---|---|---|
| **NFPA Rating (Health, Fire, Reactivity)** | : | 0, 1, 0 |
| **MSDS Version Number** | : | 2.0 |
| **MSDS Effective Date** | : | 07/07/2008 |
| **MSDS Revisions** | : | A vertical bar (\|) in the left margin indicates an amendment from the previous version. |
| **MSDS Regulation** | : | The content and format of this MSDS is in accordance with the OSHA Hazard Communication Standard, 29 CFR 1910.1200. |
| **MSDS Distribution** | : | The information in this document should be made available to all who may handle the product. |
| **Disclaimer** | : | The information contained herein is based on our current knowledge of the underlying data and is intended to describe the product for the purpose of health, safety and environmental requirements only. No warranty or guarantee is expressed or implied regarding the accuracy of these data or the results to be obtained from the use of the product. |

# Safety Data Sheet

Date Revised: 12/4/2014

Supersedes: n/a

## SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

| | |
|---|---|
| Product Name(s): | Five Star® Grout, Five Star® Grout Red, Five Star® Grout N |
| Synonyms: | FSG, FS Grout |
| Product Use: | For use in supporting machinery and equipment in high temperature environments. |
| Restrictions on Use: | N/A |
| Manufacturer/Supplier | Five Star Products, Inc.<br>750 Commerce Drive<br>Fairfield, CT 06825 USA |
| Phone #: | 203-336-7900 |
| **Emergency Phone #:** | **CHEM-TEL 1-800-255-3924**<br>**(Outside the U.S. 1-813-248-0585)** |

## SECTION 2: HAZARD(S) IDENTIFICATION-GHS INFORMATION

**Classification:**

Acute Oral Toxicity – Category 4
Skin Corrosion/Irritation – Category 2
Acute Toxicity – Dermal, Category 2
Eye Damage/Irritation – Category 1
Sensitization – Respiratory, Category 1
Carcinogenicity – Category 1A
Specific Target Organ Systemic Toxicity (Single Exposure) – Cat 3
Specific Target Organ Toxicity (Repeated Exposure) – Cat 2

**Label Elements/Hazard Pictograms:**



**Signal Word:** Danger

**Hazard Statements:**

Harmful if swallowed H302
May cause skin irritation H317
Causes severe skin burns and eye damage H314
May cause respiratory irritation H335
May cause an allergic skin reaction H317
May cause cancer by inhalation H350
May cause damage to organs through prolonged or repeat exposure H373

**Precautionary Statements/Prevention:**

Do not breathe dust, fume, gas, mist, vapors, or spray, P260.

Wash thoroughly after handling, P264.

Do not eat, drink or smoke when using this product, P270.

Contaminated work clothing should not be allowed out of the workplace, P272.

Wear protective gloves, protective clothing, eye protection and face protection, P280.

Wear respiratory protection, P284.

**Response:**

If swallowed: Rinse mouth. Do NOT induce vomiting, P330, P331.

If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower, P361, P353.

If inhaled: Remove person to fresh air and keep comfortable for breathing, P340.

If in eyes: Rinse cautiously with water for several minutes, P351. Remove contact lenses, if present and easy to do. Continue rinsing, P338.

Immediately call a poison center or doctor, P310.

If skin irritation or rash occurs, P333: Get medical advice/attention, P313.

If experiencing respiratory symptoms, P342: Call a poison center or doctor, P310. Wash contaminated clothing before reuse, P363.

**Storage:**

Store locked up.

**Disposal:**

Dispose of contents/container in accordance with applicable regional, national, and local laws and regulations.

**Hazards Not Otherwise Classified:**

Not applicable

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

| Hazardous Ingredient(s) | Common Name/Synonyms | CAS No. | % wt/wt |
|---|---|---|---|
| Portland Cement | Hydraulic cement | 65997-15-1 | 45-60 |
| Quartz | Silicon Dioxide, Silica Sand | 14808-60-7 | 40-55 |

## SECTION 4: FIRST AID MEASURES

**Inhalation:**

If inhaled: Remove person to fresh air and keep comfortable for breathing.

If experiencing respiratory symptoms call poison center or doctor.

| | |
|---|---|
| **Eye Contact:** | If in eyes: Rinse cautiously with water for at least 30 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor. |
| **Skin Contact:** | If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower for at least 15 minutes. Immediately call a poison center or doctor if irritation develops. Wash contaminated clothing before reuse. |
| **Ingestion:** | If swallowed: Rinse mouth. Do NOT induce vomiting. Immediately call a poison center or doctor. If vomiting occurs naturally, have victim lean forward to reduce the risk of aspiration. Never give anything by mouth to an unconscious person. |
| **General Advice:** | In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible). |
| **Note to Physicians:** | Symptoms may not appear immediately. Treat symptomatically. |

## SECTION 5: FIRE-FIGHTING MEASURES

| | |
|---|---|
| **Flammability and Explosion Information:** | Not flammable or combustible by OSHA/WHMIS criteria. |
| **Sensitivity to Mechanical Impact:** | This material is not sensitive to mechanical impact. |
| **Sensitivity to Static Discharge:** | This material is sensitive to static discharge at temperatures at or above the flash point. |

**MEANS OF EXTINCTION**

| | |
|---|---|
| **Suitable Extinguishing Media:** | Small Fire: Dry chemical, $CO_2$, or water spray.<br>Large Fire: Dry chemical, $CO_2$, alcohol-resistant foam or water spray. Move containers from fire area if you can do it without risk. Dike fire-control water for later disposal; do not scatter the material. |
| **Unsuitable Extinguishing Media:** | Not available. |
| **Product of Combustion:** | Non-combustible |
| **Protection of Firefighters:** | As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. |

## SECTION 6: ACCIDENTAL RELEASE MEASURES

**Emergency Procedures:** Use personal protective equipment. Ensure adequate ventilation. Keep people from spill. Avoid dust formation.

**Personal Precautions:** Avoid inhalation of dust. Do not get into eyes, on skin, or clothing.

**Environmental Precautions:** The environmental impact of this product has not been fully investigated.

**Methods for Containment:** Cover powder spill with plastic sheet or tarp to minimize spreading. Collect this material into a disposal container by sucking or sweeping up.

**Methods for Cleanup:** Pick up and transfer to properly labeled containers.

**Other Information:** See Section 13 for disposal considerations.

## SECTION 7: HANDLING AND STORAGE

**Handling:** Wear personal protective equipment. Ensure adequate ventilation. Avoid dust formation. Do not breathe dust. Prevent contact with skin, eyes, and clothing. Wash thoroughly after handling.

**Storage:** Keep containers tightly closed in a cool, dry, and well-ventilated place. Store locked up.

## SECTION 8: EXPOSURE CONTORLS/PERSONAL PROTECTION

**Exposure Guidelines**

| Component | CAS No. | ACGIH TLV | OSHA PEL |
|---|---|---|---|
| Portland cement | 65997-15-1 | TWA: 1mg/m$^3$ particulate matter containing no asbestos and <1% crystalline silica, respirable fraction | TWA: 15 mg/m$^3$ total dust TWA: 5 mg/m$^3$ respirable fraction (vacated) TWA: 10 mg/m$^3$ total dust (vacated) TWA: 5 mg/m$^3$ respirable fraction TWA: 50 mppcf <1% Crystalline silica |
| Quartz | 14808-60-7 | TWA: 0.025mg/m$^3$ respirable fraction | 30/(%SiO2+2) mg/m$^3$ TWA, Total Dust;250/%SiO2+5) mppcf TWA, respirable fraction; 10/(%SiO2+2) mg/m$^3$ TWA, respirable TWA: 0.1 mg/m$^3$ (vacated) |

PEL: Permissible Exposure Limit TLV: Threshold Limit Value

**Engineering Controls:** Not normally required.

**PERSONAL PROTECTIVE EQUIPMENT (PPE)**

**Eye/Face Protection:** Tightly fitting safety goggles

**Hand Protection:** Impervious gloves. Impervious clothing.

**Skin and Body Protection:** Impervious gloves. Impervious clothing.

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

**General Hygiene Considerations:** Handle according to established industrial hygiene and safety practices.

| **SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES** | |
|---|---|
| **Appearance:** | Gray, finely ground solid powder |
| **Color:** | Gray |
| **Odor:** | None |
| **Odor Threshold:** | None |
| **Physical State:** | Solid, powder |
| **pH:** | 12 when mixed with water |
| **Melting Point / Freezing Point:** | n/a |
| **Initial Boiling Point:** | n/a |
| **Boiling Point:** | n/a |
| **Flash Point:** | n/a |
| **Evaporation Rate:** | n/a |
| **Flammability (solid, gas):** | n/a |
| **Lower Flammability Limit:** | n/a |
| **Upper Flammability Limit:** | n/a |
| **Vapor Pressure:** | n/a |
| **Vapor Density:** | n/a |

| | |
|---|---|
| **Relative Density:** | n/a |
| **Solubility:** | Negligible |
| **Partition Coefficient: n-Octanol/Water:** | n/a |
| **Auto-ignition Temperature:** | n/a |
| **Decomposition Temperature:** | n/a |
| **Viscosity:** | n/a |
| **Percent Volatile, wt.%:** | n/a |
| **VOC Content, wt.%:** | n/a |
| **Density:** | n/a |
| **Coefficient of Water/Oil Distribution:** | n/a |

## SECTION 10: STABILITY AND REACTIVITY

**Chemical Stability:** Stable under recommended storage conditions.

**Possibility of Hazardous Reactions:** None under normal processing.

**Conditions to Avoid:** Exposure to water – product may harden on contact with water.

**Incompatible Materials:** Strong acids.

## SECTION 11: TOXICOLOGICAL INFORMATION

Information on likely routes of exposure.

Product information

| | |
|---|---|
| Inhalation | Irritating to respiratory system. Irritating to mucous membranes. |
| Eye contact | Risk of serious damage to eyes. |
| Skin contact | Irritating to skin. May cause allergic skin reaction |
| Ingestion | Harmful if swallowed. |

Component information

Chemical Name: Quartz LD50 Oral: 500 mg/kg (Rat) ACGIH: A2 – Suspected Human Carcinogen

IARC: Group 1 – Carcinogenic to humans OSHA: X-present

Delayed and immediate effects and also chronic effects from short and long term exposure.

## SECTION 12: ECOLOGICAL INFORMATION

**Toxicity:** The environmental impact of this product has not been fully investigated.

**Aquatic Toxicity:** The environmental impact of this product has not been fully investigated.

**Persistence and Degradability:** No information available.

| | |
|---|---|
| **Bio-accumulative Potential:** | Does not accumulate in organisms |
| **Mobility in Soil:** | No further relevant information available |
| **Ecotoxical Effects Remark:** | No information available. |
| **Additional Ecological Information** | No information available. |
| **General Notes:** | This statement was deduced from products with a similar structure or composition. Due to available data on eliminability/decomposition and bio-accumulation potential prolonged term damage of the environment cannot be excluded. Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system. Also poisonous for fish and plankton in water bodies. Toxic for aquatic organisms. |
| **PBT Assessment:** | N/A |
| **vPvB Assessment:** | N/A |
| **Other Adverse Effects:** | No further relevant information available |

## SECTION 13: DISPOSAL CONSIDERATIONS

**Waste Treatment Methods**

| | |
|---|---|
| **Recommendation:** | This material as supplied is not a hazardous waste according to Federal regulations (40CFR261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. |

**Uncleaned Packaging**

| | |
|---|---|
| **Recommendation:** | Disposal must be made according to official regulations. Do not re-use empty containers. |

## SECTION 14: TRANSPORT INFORMATION

| | |
|---|---|
| **US DEPARTMENT of TRANSPORTATION (DOT) Proper Shipping Name:** | Not regulated. |
| **Class:** | n/a |
| **UN #:** | n/a |
| **Packing Group:** | n/a |

| | |
|---|---|
| **CANADA Transportation of Dangerous Goods (TDG) Proper Shipping Name:** | Not regulated |
| **Class:** | n/a |
| **UN #:** | n/a |
| **Packing Group:** | n/a |

## SECTION 15: REGULATORY INFORMATION

**CHEMICAL INVENTORIES**

**US (TSCA):** The components of this product are in compliance with the chemical notification requirements of TSCA.

**CANADA (DSL):** The components of this product are in compliance with the chemical notification requirements of NSN Regulations under CEPA, 1999.

**U.S. FEDERAL REGULATIONS** Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the CFR, Part 372.

**UNITED STATES:** This SDS has been prepared to meet the US OSHA Hazard Communication Standard, 29 CFR 1910.1200

**SARA 311/312 Hazard Categories**

Acute health hazard – Yes
Chronic Health hazard – Yes
Fire Hazard – No
Sudden Release of Pressure – No
Reactive Hazard - No

**US STATE Right to Know Regulations**

| Chemical Name | NJ | MA | PA | IL | RI |
|---|---|---|---|---|---|
| **Portland Cement** | **X** | **X** | **X** | | **X** |
| **Quartz** | **X** | **X** | **X** | | **X** |

**California**
**California Prop 65:** This product contains the following Proposition 65 chemicals.
Chemical Name: Quartz CAS-No: 14808-60-7 CA Prop. 65: Carcinogen

## SECTION 16: OTHER INFORMATION

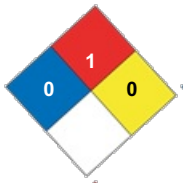
**Disclaimer:** The information contained in this document applies to the specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for one's own particular use.

| Personal Protective Equipment | WHMIS Pictograms | DOT Pictograms |
|---|---|---|
|   Protective Gloves  Safety Glasses | Not Controlled | Not Regulated |

## SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

| | |
|---|---|
| Product Name: | **Foamular® Extruded Polystyrene Insulation** |
| MSDS Manufacturer Number: | 21528-NAM |
| Synonyms: | Buoyancy Billet, Foamular® 150, Foamular® 250, Foamular® 350, Foamular® 400, Foamular® 404, Foamular® 600, Foamular® 604, Foamular® 1000, Foamular® CW15, Foamular® CW25, Foamular® LT30, Foamular® LT40, Foamular® 404RB, Foamular® 604RB, Foamular® AgTek, Foamular® PROPINK®, Foamular® DURAPINK®, Foamular® PINKCORE®, Foamular® PINKCORE® TT, Foamular® Half-Inch, Foamular® INSULPINK®, Foamular® THERMAPINK®, Foamular® DURAPINK® FA, Foamular® DURAPINK® Plus, Foamular® INSULPINK® - Z, Foamular® THERMAPINK® 18, Foamular® THERMAPINK® 25, Foamular® THERMAPINK® 40, Foamular® THERMAPINK® 60, Foamular® Extruded Polystyrene, Foamular® Insulating Sheathing, Foamular® INSUL-DRAIN®, Foamular® PinkForm-Xtra ; Foamular® OC LiteForm |
| Manufacturer Name: | Owens Corning Foam Insulation, LLC |
| Address: | One Owens Corning Parkway<br>Toledo, OH 43659 |
| Customer Service Phone Number: | 1-800-GET-PINK or 1-800-438-7465 |
| Health Issues Information: | 1-419-248-8234 (8am-5pm ET) |
| 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: | March 05, 1997 |
| MSDS Revision Date: | October 25, 2010 |

NFPA




HMIS

| | |
|---|---|
| Health Hazard | 0 |
| Fire Hazard | 1 |
| Reactivity | 0 |
| Personal Protection | X |

* Chronic Health Effects

## SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENTS

| Chemical Name | CAS# | Ingredient Percent |
|---|---|---|
| Polystyrene | 9003-53-6 | 80 - 90 by weight |
| Talc | 14807-96-6 | 0 - 2 by weight |
| 1-Chloro-1, 1-difluoroethane (HCFC-142B) | 75-68-3 | 7 - 12 by weight |
| Hexabromocyclododecane | 3194-55-6 | 0.5 - 1.5 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 3 - HAZARDS IDENTIFICATION

**Applies to Product**

Emergency Overview: Dense Black Smoke will be produced during a fire.
Grinding, sawing or fabrication activities can produce dust particles which under certain conditions may ignite or form explosive dust atmospheres.

| | |
|---|---|
| Route of Exposure: | Eye contact<br>Inhalation |
| Potential Health Effects: | |
| Eye: | Dust may cause slight irritation. |
| Skin: | No effects expected. |
| Inhalation: | Dust 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. |
| 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. |
| OSHA Regulatory Status: | This product is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200). |
| Appearance and Odor | Pink, white or green closed-cell foam board with no odor. |

## SECTION 4 - FIRST AID MEASURES

| | |
|---|---|
| Eye Contact: | Immediately flush eyes with plenty of water for at least 15 to 20 minutes.<br>Ensure adequate flushing of the eyes by separating the eyelids with fingers.<br>Do not rub or scratch eyes.<br>If eye irritation persists, consult a specialist. |
| Skin Contact: | Immediately wash skin with soap and plenty of water.<br>Get medical attention if irritation develops or persists. |
| Inhalation: | Move to fresh air.<br>If symptoms persist, call a physician. |
| Ingestion: | Accidental ingestion of this material is unlikely.<br>If this does occur, watch person for several days to make sure intestinal blockage does not occur.<br>If symptoms persist, call a physician. |

## SECTION 5 - FIRE FIGHTING MEASURES

| | |
|---|---|
| Flammable Properties: | Non Flammable. |
| Flash Point: | > 615 °F (324 °C) |
| Flash Point Method: | ASTM D 1929 |
| Auto Ignition Temperature: | Not applicable. |
| Lower Flammable/Explosive Limit: | Not applicable. |
| Upper Flammable/Explosive Limit: | Not applicable. |
| Extinguishing Media: | dry chemical<br>foam<br>carbon dioxide (CO2)<br>water fog |
| Unsuitable Media: | None. |
| Protective Equipment: | Wear self-contained breathing apparatus (SCBA) and full fire fighting protective gear. |
| Unusual Fire Hazards: | Grinding, sawing or fabrication activities can produce dust particles which under certain conditions may ignite or form explosive dust atmospheres. |
| Hazardous Combustion Byproducts: | Carbon monoxide.<br>Carbon dioxide.<br>styrene.<br>Small quantities of hydrogen fluoride, hydrogen chloride, fluorine and chlorine could be released.<br>Other undetermined compounds could be released in small quantities.<br><br>HCFC-142b thermally decomposes at > 430°C (850°F). Decomposition products include: Hydrogen fluoride, hydrogen chloride, fluorine, and chlorine. |
| Universal Fire And Explosion Hazards: | Not available. |

**NFPA Ratings:**

| | |
|---|---|
| NFPA Health: | 0 |
| NFPA Flammability: | 1 |
| NFPA Reactivity: | 0 |

## SECTION 6 - ACCIDENTAL RELEASE MEASURES

| | |
|---|---|
| Personnel Precautions: | Avoid contact with skin and eyes. |
| Methods for containment: | This material will settle out of the air.<br>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.<br>Avoid dry sweeping.<br>Pick up and transfer to properly labeled containers.<br>After cleaning, flush away traces with water. |
| Other Precautions: | Does not apply. |

## SECTION 7 - HANDLING and STORAGE

| | |
|---|---|
| Handling: | Avoid dust formation.<br>Do not breathe dust.<br>Wear personal protective equipment. |
| Storage: | Keep product in its packaging until use to minimize potential dust generation.<br>Product should be kept dry and undercover. |

## 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.<br>Dust collection system must be used in transferring operations, cutting or machining or other dust generating processes, such as using power tools.<br>Vacuum or wet clean-up methods should be used.<br>Grinding, cutting, sawing or fabrication activities that cut large numbers of interior foam cells can release localized amounts of flammable residual blowing agent or release dust particles that under certain conditions may ignite or form explosive dust atmospheres. |
| Eye/Face Protection: | Safety glasses with side-shields. |
| Skin Protection Description: | Protective gloves.<br>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. |
| General Hygiene Considerations: | Wash hands before breaks and immediately after handling the product.<br>Remove and wash contaminated clothing before re-use. |

EXPOSURE GUIDELINES

| Ingredient | Guideline OSHA | Guideline NIOSH | Guideline ACGIH | Ontario Canada | Mexico |
|---|---|---|---|---|---|
| Polystyrene | 5 mg/m3, Respirable, 10 mg/m3, Total Particulates Not Otherwise Classified (PNOC) | | 3 mg/m3, respirable, 10 mg/m3, inhalable particles (NOS) | 3 mg/m3, respirable, 10 mg/m3, inhalable Particulates (Insoluble) Not Otherwise Classified | |
| Talc | | REL-TWA: 2 mg/m3 (Respirable) | TLV-TWA: 2 mg/m3 (Respirable) | TWAEV-TWA: 2 f/cc (Respirable) | VEMP-TWA: 3 mg/m3 (Respirable) |

## SECTION 9 - PHYSICAL and CHEMICAL PROPERTIES

| | |
|---|---|
| Physical State: | Solid. |
| Physical State Appearance: | Foam. |
| Color: | Pink, white or green |
| Odor: | No detectable odor. |
| Boiling Point: | Decomposes over600 °F (316 °C) |
| Melting Point: | Softens @ 220 °F (104 °C) |
| Specific Gravity: | 0.021-0.064 (Ref: water = 1). |
| Solubility: | Insoluble in water. |
| Vapor Density: | No Data |
| Vapor Pressure: | No Data |
| Evaporation Rate: | No Data |
| pH: | No Data |

| | |
|---|---|
| Flash Point: | > 615 °F (324 °C) |
| Flash Point Method: | ASTM D 1929 |
| Auto Ignition Temperature: | Not applicable. |

## SECTION 10 - STABILITY and REACTIVITY

| | |
|---|---|
| Chemical Stability: | Stable under normal conditions. |
| Hazardous Polymerization: | Hazardous polymerization does not occur. |
| Conditions to Avoid: | Dust dispersion in air. |
| Incompatible Materials: | Hydrocarbons<br>esters<br>Amines |
| 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.

| Carcinogens: | | | | | | |
|---|---|---|---|---|---|---|
| | ACGIH | NIOSH | OSHA | IARC | NTP | MEXICO |
| Polystyrene | No Data | No Data | No Data | Group 3 - Not Classifiable as to its Carcinogenicity to Humans. | No Data | No Data |
| Talc | A4 Not Classifiable as a Human Carcinogen | No Data | No Data | Group 2A - Probably carcinogenic to humans. | No Data | A4 Not Classifiable as a Human Carcinogen |
| 1-Chloro-1, 1-difluoroethane (HCFC-142B) | No Data | No Data | No Data | No Data | No Data | No Data |
| Hexabromocyclododecane | 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. |

**Talc :**

| | |
|---|---|
| Skin: | Skin - Human Standard Draize Test. : 300 ug/3D-I - [mild](RTECS) |
| Inhalation: | Inhalation - Rat TCLo: 17 mg/m3/6H/26D (intermittent) [Lungs, Thorax, or Respiration - other changes]<br>Inhalation - Mouse TCLo: 20400 ug/m3/6H/26D (intermittent) [Lungs, Thorax, or Respiration - other changes]<br>Inhalation - Rat TCLo: 18 mg/m3/6H/2Y (intermittent) [Tumorigenic - carcinogenic by RTECS criteria; Lungs, Thorax, or Respiration - bronchiogenic carcinoma; Endocrine - tumors]<br>Inhalation - Rat TC: 11 mg/m3/1Y (intermittent) [Tumorigenic - equivocal tumorigenic agent by RTECS criteria; Lungs, Thorax, or Respiration - tumors](RTECS) |

**1-Chloro-1, 1-difluoroethane (HCFC-142B) :**

| | |
|---|---|
| Inhalation: | Inhalation - Mouse LC50: 1758000 mg/m3/2H [Details of toxic effects not reported other than lethal dose value.<br>Inhalation - Rat LC50: 2050000 mg/m3/4H [Details of toxic effects not reported other than lethal dose value.(RTECS) |

**Hexabromocyclododecane :**

| | |
|---|---|
| Skin: | Skin - Rabbit LD50: >8 gm/kg [Details of toxic effects not reported other than lethal dose value.](RTECS) |
| Ingestion: | Inhalation - Rat LD50: >10 gm/kg [Details of toxic effects not reported other than lethal dose value.](RTECS) |

## SECTION 12 - ECOLOGICAL INFORMATION

**Applies to Product :**

| | |
|---|---|
| Ecotoxicity: | This material is not expected to cause harm to animals, plants or fish. |
| Environmental Fate: | No data available for this product. |
| 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. |
| Contaminated Packaging: | Empty containers should be taken for local recycling, recovery or waste disposal. |
| RCRA Number: | No EPA Waste Numbers are applicable for this product's components. |
| RCRA Characteristics: | This material is not expected to be a characteristic hazardous waste under RCRA. |

## SECTION 14 - TRANSPORT INFORMATION

| | |
|---|---|
| DOT Shipping Name: | Not Regulated. |
| IATA Shipping Name: | Not Regulated. |
| Canadian Shipping Name: | Not Regulated. |
| IMDG Shipping Name : | Not Regulated. |
| ADR Shipping Name : | Not Regulated. |
| RID Shipping Name : | Not Regulated. |
| ICAO Shipping Name: | Not Regulated. |
| MEX Shipping Name : | Not Regulated. |

## SECTION 15 - REGULATORY INFORMATION

**Inventory Status**

| | Japan ENCS | ELINCS | EINECS Number | Philippines PICCS | South Korea KECL |
|---|---|---|---|---|---|
| Polystyrene | (6)-120 | 500-008-9 | 500-008-9 | | KE-13257 |
| Talc | | | 238-877-9 | Listed | KE-32773 |
| 1-Chloro-1, 1-difluoroethane (HCFC-142B) | | | 200-891-8 | Listed | KE-05597 |
| Hexabromocyclododecane | | | 221-695-9 | Listed | KE-18398 |

| | Australia AICS | Canada DSL | EINECS Inventory Status | TSCA Inventory Status | |
|---|---|---|---|---|---|
| Polystyrene | Listed | Listed | No | Listed | |
| Talc | Listed | Listed | Yes | Listed | |
| 1-Chloro-1, 1-difluoroethane (HCFC-142B) | Listed | Listed | Yes | Listed | |
| Hexabromocyclododecane | Listed | Listed | Yes | Listed | |

**Applies to Product :**

| | |
|---|---|
| Canada Reg. Status: | This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by the Controlled Products Regulations. |
| Canada WHMIS: | Not controlled. |
| CA PROP 65: | The following statement(s) are provided under the California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65):<br>This product does not contain any Proposition 65 chemicals. |
| Section 311/312 Hazard Categories: | Acute Health Hazard: No<br>Chronic Health Hazard: No<br>Risk of ignition: No<br>Sudden Release of Pressure Hazard: No<br>Reactive Hazard: No |
| Clean Air Act: | This product does not contain any Hazardous Air Pollutants (HAPs). |

**1-Chloro-1, 1-difluoroethane (HCFC-142B) :**

Canada IDL: Identified under the Canadian Hazardous Products Act Ingredient Disclosure List: 1%. Item: 357(425)

Section 313: Listed

### State Right To Know

**Talc**

All State Information:

**1-Chloro-1, 1-difluoroethane (HCFC-142B)**

All State Information:

| | RI | MN | IL | PA | MA |
|---|---|---|---|---|---|
| Polystyrene | No Data | No Data | No Data | No Data | No Data |
| Talc | Listed | Listed | No Data | Listed | Listed |
| 1-Chloro-1, 1-difluoroethane (HCFC-142B) | No Data | No Data | No Data | Listed | Listed |
| Hexabromocyclododecane | No Data | No Data | No Data | No Data | No Data |

| | NJ | | | | |
|---|---|---|---|---|---|
| Polystyrene | No Data | | | | |
| Talc | No Data | | | | |
| 1-Chloro-1, 1-difluoroethane (HCFC-142B) | Listed | | | | |
| Hexabromocyclododecane | No Data | | | | |

## SECTION 16 - ADDITIONAL INFORMATION

HMIS Health Hazard: 0

HMIS Fire Hazard: 1

HMIS Reactivity: 0

HMIS Personal Protection: X

MSDS Creation Date: March 05, 1997

MSDS Revision Date: October 25, 2010

MSDS Revision Notes: Added new product

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.

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# Material Safety Data Sheet
**The Dow Chemical Company**

**Product Name:** STYROFOAM(TM) 0.75 X 48 Inch Scoreboard Extruded Foam Insulation

**Issue Date:** 01/29/2014

**Print Date:** 30 Jan 2014

The Dow Chemical Company encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

## 1. Product and Company Identification

**Product Name**

STYROFOAM(TM) 0.75 X 48 Inch Scoreboard Extruded Foam Insulation

**COMPANY IDENTIFICATION**

The Dow Chemical Company
2030 Willard H. Dow Center
Midland, MI 48674
United States

Customer Information Number: 800-258-2436

**EMERGENCY TELEPHONE NUMBER**

**24-Hour Emergency Contact:** 989-636-4400
**Local Emergency Contact:** 989-636-4400

## 2. Hazards Identification

### Emergency Overview

**Color:** Blue
**Physical State:** Board
**Odor:** Odorless
**Hazards of product:**

Toxic fumes may be released in fire situations.

### OSHA Hazard Communication Standard

This product is not a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

### Potential Health Effects

**Eye Contact:** Solid or dust may cause irritation due to mechanical action. Fumes/vapor released during thermal operations such as hot-wire cutting may cause eye irritation.
**Skin Contact:** Essentially nonirritating to skin. Mechanical injury only.
**Skin Absorption:** Skin absorption is unlikely due to physical properties.

**Inhalation:** Dust may cause irritation to upper respiratory tract (nose and throat). Fumes/vapors released during thermal operations such as hot wire cutting may cause respiratory irritation. Concentrations of the blowing agents anticipated incidental to proper handling are expected to be well below those which cause acute inhalation effects and below exposure guidelines.
**Ingestion:** Swallowing is unlikely because of the physical state. Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.
**Aspiration hazard:** Based on physical properties, not likely to be an aspiration hazard.
**Birth Defects/Developmental Effects:** Contains component(s) which did not cause birth defects in animals; other fetal effects occurred only at doses toxic to the mother. The component(s) is/are: 1,1,1,2-Tetrafluoroethane. Testing has indicated that normal handling and cutting are unlikely to result in exposure levels sufficient to cause the listed effects. Contains an additional component(s) that is/are encapsulated in the product and are not expected to be released under normal processing conditions or foreseeable emergency.

## 3. Composition Information

| Component | CAS # | Amount |
|---|---|---|
| 2-Propenenitrile, polymer with ethenylbenzene | 9003-54-7 | > 60.0 - < 100.0 % |
| Styrene, polymers | 9003-53-6 | >= 0.0 - <= 10.0 % |
| 1,1,1,2-Tetrafluoroethane | 811-97-2 | >= 5.0 - <= 10.0 % |

Extruded styrenic polymer foam containing a halogenated flame retardant system.

## 4. First-aid measures

### Description of first aid measures

**Inhalation:** Move person to fresh air; if effects occur, consult a physician.
**Skin Contact:** Wash skin with plenty of water.
**Eye Contact:** May cause injury due to mechanical action. If irritation occurs, Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.
**Ingestion:** No emergency medical treatment necessary.

### Most important symptoms and effects, both acute and delayed

Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

### Indication of immediate medical attention and special treatment needed

No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

## 5. Fire Fighting Measures

### Suitable extinguishing media

Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam.

### Special hazards arising from the substance or mixture

**Hazardous Combustion Products:** During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. In smoldering or

flaming conditions, carbon monoxide, carbon dioxide and carbon are generated. Combustion products may include and are not limited to: Hydrogen halides. Based on combustion toxicity testing, the effects of combustion from this foam are not more acutely toxic than the effects of combustion from common building materials such as wood.
**Unusual Fire and Explosion Hazards:** Mechanical cutting, grinding or sawing can cause formation of dusts. To reduce the potential for dust explosion, do not permit dust to accumulate. This product contains a flame retardant to inhibit accidental ignition from small fire sources. This plastic foam product is combustible and should be protected from flames and other high heat sources. For more information, contact Dow. Dense smoke is produced when product burns.

### Advice for firefighters

**Fire Fighting Procedures:** Keep people away. Isolate fire and deny unnecessary entry. Soak thoroughly with water to cool and prevent re-ignition. If material is molten, do not apply direct water stream. Use fine water spray or foam. Cool surroundings with water to localize fire zone.
**Special Protective Equipment for Firefighters:** Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

## 6. Accidental Release Measures

**Personal precautions, protective equipment and emergency procedures:** Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

**Environmental precautions:** Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

**Methods and materials for containment and cleaning up:** Contain spilled material if possible. Collect in suitable and properly labeled containers. See Section 13, Disposal Considerations, for additional information.

## 7. Handling and Storage

### Handling
**General Handling:** Fabrication methods which involve cutting into this product may release the blowing agent(s) remaining in the cells. Use ventilation adequate to keep exposures below recommended exposure limits. See the safety datasheet. Do not enter confined spaces unless adequately ventilated. Mechanical cutting, grinding or sawing can cause formation of dusts. To reduce the potential for dust explosion, do not permit dust to accumulate. This product is combustible and may constitute a fire hazard if improperly used or installed. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

### Storage
When large quantities of this product are stored or fabricated, blowing agents may be released. Released blowing agents may thermally decompose to form gases which may accelerate corrosion or rust formation of heaters, boilers, gas fired recirculating air furnaces or heaters, or gas water heaters.
**Shelf life: Use within** 360 Months

## 8. Exposure Controls / Personal Protection

**Exposure Limits**

| Component | List | Type | Value |
|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| **1,1,1,2-Tetrafluoroethane** | AIHA WEEL | TWA | 4,240 mg/m3 | 1,000 ppm |

Concentrations of the blowing agents anticipated incidental to proper handling are expected to be well below those which cause acute inhalation effects and below exposure guidelines.

### Personal Protection

**Eye/Face Protection:** Eye protection should not be necessary. For fabrication operations safety glasses (with side shields) are recommended. If there is a potential for exposure to particles which could cause eye discomfort, wear chemical goggles.

**Skin Protection:** No precautions other than clean body-covering clothing should be needed.

**Hand protection:** Use gloves to protect from mechanical injury. Selection of gloves will depend on the task.

**Respiratory Protection:** Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. When respiratory protection is required for certain operations, including but not limited to saw, router or hot-wire cutting, use an approved air-purifying respirator. In dusty or misty atmospheres, use an approved particulate respirator. The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

**Ingestion:** No precautions necessary due to the physical properties of the material.

### Engineering Controls

**Ventilation:** Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

## 9. Physical and Chemical Properties

| | |
|---|---|
| **Appearance** | |
| **Physical State** | Board |
| **Color** | Blue |
| **Odor** | Odorless |
| **Odor Threshold** | No test data available |
| **pH** | Not applicable |
| **Melting Point** | 90 - 130 °C (194 - 266 °F) *Estimated.* |
| **Freezing Point** | Not applicable |
| **Boiling Point (760 mmHg)** | Not applicable. |
| **Flash Point - Closed Cup** | Not applicable |
| **Evaporation Rate (Butyl Acetate = 1)** | No test data available |
| **Flammability (solid, gas)** | No data available |
| **Flammable Limits In Air** | **Lower**: Not applicable<br>**Upper**: Not applicable |
| **Vapor Pressure** | Not applicable |
| **Vapor Density (air = 1)** | Not applicable |
| **Specific Gravity (H2O = 1)** | 0.027 - 0.064 *Estimated.* |
| **Solubility in water (by weight)** | insoluble in water |
| **Partition coefficient, n-octanol/water (log Pow)** | No data available for this product. See Section 12 for individual component data. |
| **Autoignition Temperature** | 354 °C (669 °F) *ASTM D1929* |
| **Decomposition Temperature** | No test data available |
| **Kinematic Viscosity** | Not applicable |
| **Explosive properties** | No |
| **Oxidizing properties** | No |
| **Liquid Density** | Not applicable |
| **Molecular Weight** | No test data available |

## 10. Stability and Reactivity

### Reactivity
No dangerous reaction known under conditions of normal use.

### Chemical stability
Thermally stable at typical use temperatures.

### Possibility of hazardous reactions
Polymerization will not occur.

**Conditions to Avoid:** Avoid temperatures above 300°C (572°F) Exposure to elevated temperatures can cause product to decompose. Avoid direct sunlight.
**Inhibitor:** Cristobalite.
**Incompatible Materials:** Avoid contact with oxidizing materials. Avoid contact with: Aldehydes. Amines. Esters. Liquid fuels. Organic solvents.

### Hazardous decomposition products
Does not normally decompose. Evolution of small amounts of hydrogen halides occur when heated over 250°C (482°F). Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Aromatic compounds. Aldehydes. Ethylbenzene. Hydrogen halides. Polymer fragments. Styrene. Under high heat, non-flaming conditions, small amounts of aromatic hydrocarbons such as styrene and ethylbenzene are generated.

## 11. Toxicological Information

### Acute Toxicity
**Ingestion**
As product: Single dose oral LD50 has not been determined.
**Dermal**
As product: The dermal LD50 has not been determined.
**Inhalation**
As product: The LC50 has not been determined.

### Eye damage/eye irritation
Solid or dust may cause irritation due to mechanical action. Fumes/vapor released during thermal operations such as hot-wire cutting may cause eye irritation.

### Skin corrosion/irritation
Essentially nonirritating to skin. Mechanical injury only.

### Sensitization
**Skin**
No relevant data found.
**Respiratory**
No relevant data found.

### Repeated Dose Toxicity
Additives are encapsulated in the product and are not expected to be released under normal processing conditions or foreseeable emergency.

### Chronic Toxicity and Carcinogenicity
Contains component(s) which did not cause cancer in laboratory animals.

### Developmental Toxicity
Contains component(s) which did not cause birth defects in animals; other fetal effects occurred only at doses toxic to the mother. The component(s) is/are: 1,1,1,2-Tetrafluoroethane. Testing has indicated that normal handling and cutting are unlikely to result in exposure levels sufficient to cause the listed effects. Contains an additional component(s) that is/are encapsulated in the product and are

not expected to be released under normal processing conditions or foreseeable emergency. Contains component(s) which did not cause birth defects or any other fetal effects in lab animals.

### Reproductive Toxicity

Contains component(s) which did not interfere with reproduction in animal studies. Contains an additional component(s) that is/are encapsulated in the product and are not expected to be released under normal processing conditions or foreseeable emergency.

### Genetic Toxicology

Genetic toxicity studies on tested components were predominantly negative. Animal genetic toxicity studies were predominantly negative.

## 12. Ecological Information

### Toxicity

Not expected to be acutely toxic to aquatic organisms.

### Persistence and Degradability

Surface photodegradation is expected with exposure to sunlight. No appreciable biodegradation is expected.

### Bioaccumulative potential

**Bioaccumulation:** No bioconcentration is expected because of the relatively high molecular weight (MW greater than 1000).

### Mobility in soil

**Mobility in soil:** In the terrestrial environment, material is expected to remain in the soil., In the aquatic environment, material is expected to float.

## 13. Disposal Considerations

DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. AS YOUR SUPPLIER, WE HAVE NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION: Composition Information. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Recycler. Reclaimer. Landfill. Incinerator or other thermal destruction device.

## 14. Transport Information

### DOT Non-Bulk

NOT REGULATED

### DOT Bulk

NOT REGULATED

**IMDG**
NOT REGULATED

**ICAO/IATA**
NOT REGULATED

*This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.*

## 15. Regulatory Information

**OSHA Hazard Communication Standard**
This product is not a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

**Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312**

| | |
|---|---|
| **Immediate (Acute) Health Hazard** | No |
| **Delayed (Chronic) Health Hazard** | No |
| **Fire Hazard** | No |
| **Reactive Hazard** | No |
| **Sudden Release of Pressure Hazard** | No |

**Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313**
To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

**Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Hazardous Substances List and/or Pennsylvania Environmental Hazardous Substance List:**
To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

**Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Special Hazardous Substances List:**
To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

**California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)**
This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

**US. Toxic Substances Control Act**
All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.30

**CEPA - Domestic Substances List (DSL)**
All substances contained in this product are listed on the Canadian Domestic Substances List (DSL) or are not required to be listed.

## 16. Other Information

## Hazard Rating System

| NFPA | Health | Fire | Reactivity |
|---|---|---|---|
| | 1 | 1 | 0 |

## Recommended Uses and Restrictions

**Identified uses**

Thermal insulation.

## Revision

Identification Number: 81888 / 0000 / Issue Date 01/29/2014 / Version: 7.0
Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

## Legend

| | |
|---|---|
| N/A | Not available |
| W/W | Weight/Weight |
| OEL | Occupational Exposure Limit |
| STEL | Short Term Exposure Limit |
| TWA | Time Weighted Average |
| ACGIH | American Conference of Governmental Industrial Hygienists, Inc. |
| DOW IHG | Dow Industrial Hygiene Guideline |
| WEEL | Workplace Environmental Exposure Level |
| HAZ_DES | Hazard Designation |
| Action Level | A value set by OSHA that is lower than the PEL which will trigger the need for activities such as exposure monitoring and medical surveillance if exceeded. |

*The Dow Chemical Company urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.*

# Material Safety Data Sheet

**THE DOW CHEMICAL COMPANY**

**Product name: SULLUBE**

**Issue Date:** 09/15/2014
**Print Date:** 11/21/2014

THE DOW CHEMICAL COMPANY encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

## 1. PRODUCT AND COMPANY IDENTIFICATION

**Product name:** SULLUBE

**Recommended use of the chemical and restrictions on use**
**Identified uses:** Selection of the appropriate polyglycol product for a specific application requires knowledge of the fluid requirements of the application, awareness of the most important of these requirements, and a match-up with the properties of the various polyglycol materials. Polyglycol products can be formulated for use in numerous industry applications such as hydraulic fluids, quenchants, compressor and refrigeration lubricants, heat transfer fluids, machinery lubricants, solder assist fluids, metalworking lubricants, textile finishing, etc. We recommend that you use this product in a manner consistent with the listed use. If your intended use is not consistent with the stated use, please contact your sales or technical service representative.

**COMPANY IDENTIFICATION**
THE DOW CHEMICAL COMPANY
2030 WILLARD H DOW CENTER
MIDLAND MI 48674-0000
UNITED STATES

**Customer Information Number:** 800-258-2436
SDSQuestion@dow.com

**EMERGENCY TELEPHONE NUMBER**
**24-Hour Emergency Contact:** 989-636-4400
**Local Emergency Contact:** 989-636-4400

## 2. HAZARDS IDENTIFICATION

**Emergency Overview**

**Appearance**

| | |
|---|---|
| Physical state | Liquid. |
| Color | Green |
| **Odor** | Mild |

| **Hazard Summary** | No significant immediate hazards for emergency response are known. |
|---|---|

**Potential Health Effects**

**Eyes:** Essentially nonirritating to eyes.

**Skin:** Brief contact may cause slight skin irritation with local redness.
Prolonged contact may cause slight skin irritation with local redness.
Prolonged skin contact is unlikely to result in absorption of harmful amounts.

**Inhalation:** At room temperature, exposure to vapor is minimal due to low volatility; single exposure is not likely to be hazardous.
If material is heated or aerosol/mist is produced, concentrations may be attained that are sufficient to cause respiratory irritation and other effects.

**Ingestion:** Low toxicity if swallowed.
Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

**Chemical nature:** Polyglycol
This product is a mixture.

| Component | CASRN | Concentration |
|---|---|---|
| Polypropylene glycol | Trade secret | > 65.0 - < 75.0 % |
| Pentaerythritol ester | Trade secret | > 22.0 - < 27.0 % |
| Aromatic amine | Trade secret | > 4.0 - < 6.0 % |

## 4. FIRST AID MEASURES

**Description of first aid measures**
**General advice:** If potential for exposure exists refer to Section 8 for specific personal protective equipment.

**Inhalation:** Move person to fresh air; if effects occur, consult a physician.

**Skin contact:** Wash off with plenty of water.

**Eye contact:** Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.

**Ingestion:** If swallowed, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.

**Most important symptoms and effects, both acute and delayed:** Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

**Indication of any immediate medical attention and special treatment needed**
**Notes to physician:** No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

## 5. FIREFIGHTING MEASURES

**Suitable extinguishing media:** Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.

**Unsuitable extinguishing media:** Do not use direct water stream. May spread fire.

**Special hazards arising from the substance or mixture**
**Hazardous combustion products:** During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Nitrogen oxides. Carbon monoxide. Carbon dioxide.

**Unusual Fire and Explosion Hazards:** Container may rupture from gas generation in a fire situation. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids.

**Advice for firefighters**
**Fire Fighting Procedures:** Keep people away. Isolate fire and deny unnecessary entry. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Do not use direct water stream. May spread fire. Move container from fire area if this is possible without hazard. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage.

**Special protective equipment for firefighters:** Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment and emergency procedures:** Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection. Refer to section 7, Handling, for additional precautionary measures.

**Environmental precautions:** Material will float on water. Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

**Methods and materials for containment and cleaning up:** Contain spilled material if possible. Collect in suitable and properly labeled containers. See Section 13, Disposal Considerations, for additional information.

## 7. HANDLING AND STORAGE

**Precautions for safe handling:** No special precautions required. Do not use sodium nitrite or other nitrosating agents in formulations containing this product. Suspected cancer-causing nitrosamines could be formed. Spills of these organic materials on hot fibrous insulations may lead to lowering of the autoignition temperatures possibly resulting in spontaneous combustion.

**Conditions for safe storage:** Store in the following material(s): 316 stainless steel. Carbon steel. Glass-lined container. Polypropylene. Polyethylene-lined container. Stainless steel. Teflon. This material may soften and lift certain paint and surface coatings. Use product promptly after opening. Store in original unopened container. Unopened containers of material stored beyond the recommended shelf life should be retested against the sales specifications before use. Additional storage and handling information on this product may be obtained by calling your sales or customer service contact.

**Storage stability**

| **Shelf life: Use within** |
|---|
| 24 Month |

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Control parameters**
Exposure limits are listed below, if they exist.

None established

**Exposure controls**
**Engineering controls:** Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

**Individual protection measures**

**Eye/face protection:** Use safety glasses (with side shields).

**Skin protection**

**Hand protection:** Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Butyl rubber. Ethyl vinyl alcohol laminate ("EVAL"). Examples of acceptable glove barrier materials include: Natural rubber ("latex"). Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyvinyl chloride ("PVC" or "vinyl"). Viton. NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

**Other protection:** Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

**Respiratory protection:** Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. For most conditions no respiratory protection should be needed; however, if discomfort is experienced, use an approved air-purifying respirator.
The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| **Appearance** | |
| **Physical state** | Liquid. |
| **Color** | Green |
| **Odor** | Mild |
| **Odor Threshold** | No test data available |
| **pH** | 8 - 10 *DOWM 101495* (16% in water/methanol, 1:10) |
| **Melting point/range** | Not applicable to liquids |
| **Freezing point** | See Pour Point |
| **Boiling point (760 mmHg)** | Decomposes before boiling |
| **Flash point** | **closed cup** 210 °C ( 410 °F) *ASTM D 93* |
| **Evaporation Rate (Butyl Acetate = 1)** | No test data available |
| **Flammability (solid, gas)** | No |
| **Lower explosion limit** | No test data available |
| **Upper explosion limit** | No test data available |
| **Vapor Pressure** | < 0.01 mmHg at 20 °C (68 °F) *ASTM E1719* |
| **Relative Vapor Density (air = 1)** | No test data available |
| **Relative Density (water = 1)** | 0.9827 at 25 °C (77 °F) / 25 °C *ASTM D941* |
| **Water solubility** | < 0.1 % at 20 °C (68 °F) *Measured* |
| **Partition coefficient: n-octanol/water** | no data available |
| **Auto-ignition temperature** | 385 °C (725 °F) *ASTM E659* |
| **Decomposition temperature** | No test data available |
| **Kinematic Viscosity** | 33.9 - 42.1 mm2/s at 40 °C (104 °F) *ASTM D 445* |
| **Explosive properties** | No |
| **Oxidizing properties** | No |
| **Liquid Density** | 0.9826 g/cm3 at 25 °C (77 °F) *ASTM D941* |
| **Molecular weight** | Not determined |
| **pour point** | -50 °C ( -58 °F) *ASTM D97* |

NOTE: The physical data presented above are typical values and should not be construed as a specification.

## 10. STABILITY AND REACTIVITY

**Reactivity:** no data available

**Chemical stability:** Thermally stable at typical use temperatures.

**Possibility of hazardous reactions:** Polymerization will not occur.

**Conditions to avoid:** Exposure to elevated temperatures can cause product to decompose. Generation of gas during decomposition can cause pressure in closed systems.

**Incompatible materials:** Avoid contact with: Strong acids. Strong bases. Strong oxidizers.

**Hazardous decomposition products:** Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Aldehydes. Alcohols. Ethers. Hydrocarbons. Ketones. Organic acids. Polymer fragments.

## 11. TOXICOLOGICAL INFORMATION

*Toxicological information on this product or its components appear in this section when such data is available.*

**Acute toxicity**

**Acute oral toxicity**
Low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury.

LD50, rat, female, > 2,000 mg/kg No deaths occurred at this concentration.

**Acute dermal toxicity**
Prolonged skin contact is unlikely to result in absorption of harmful amounts.

LD50, rabbit, male, > 2,000 mg/kg No deaths occurred at this concentration.

**Acute inhalation toxicity**
At room temperature, exposure to vapor is minimal due to low volatility; single exposure is not likely to be hazardous. If material is heated or aerosol/mist is produced, concentrations may be attained that are sufficient to cause respiratory irritation and other effects.
As product: The LC50 has not been determined.

**Skin corrosion/irritation**
Brief contact may cause slight skin irritation with local redness.
Prolonged contact may cause slight skin irritation with local redness.

**Serious eye damage/eye irritation**
Essentially nonirritating to eyes.

**Sensitization**
Did not cause allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:
No relevant data found.

**Specific Target Organ Systemic Toxicity (Single Exposure)**
Evaluation of available data suggests that this material is not an STOT-SE toxicant.

**Specific Target Organ Systemic Toxicity (Repeated Exposure)**
Based on available data, repeated exposures to small amounts are not anticipated to cause significant adverse effects.

**Carcinogenicity**
No relevant data found.

**Teratogenicity**
No relevant data found.

**Reproductive toxicity**
No relevant data found.

**Mutagenicity**
No relevant data found.

**Aspiration Hazard**
Based on physical properties, not likely to be an aspiration hazard.

**COMPONENTS INFLUENCING TOXICOLOGY:**

**Polypropylene glycol**

**Acute inhalation toxicity**
At room temperature, exposure to vapor is minimal due to low volatility; single exposure is not likely to be hazardous. Vapor from heated material or mist may cause respiratory irritation.

The LC50 has not been determined.

**Pentaerythritol ester**

**Acute inhalation toxicity**
At room temperature, exposure to vapor is minimal due to low volatility. Vapor from heated material or mist may cause respiratory irritation.

The LC50 has not been determined.

**Aromatic amine**

**Acute inhalation toxicity**
As product: The LC50 has not been determined.

## 12. ECOLOGICAL INFORMATION

*Ecotoxicological information on this product or its components appear in this section when such data is available.*

**Toxicity**

**Acute toxicity to fish**
Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

LL50, Oncorhynchus mykiss (rainbow trout), static test, 96 Hour, > 100 mg/l, OECD Test Guideline 203 or Equivalent

**Acute toxicity to aquatic invertebrates**
EL50, Daphnia magna (Water flea), static test, 48 Hour, > 100 mg/l, OECD Test Guideline 202 or Equivalent

**Persistence and degradability**

**Biodegradability:** Based on information for a similar material: Material is inherently biodegradable (reaches > 20% biodegradation in OECD test(s) for inherent biodegradability). Based on stringent OECD test guidelines, this material cannot be considered as readily biodegradable; however, these results do not necessarily mean that the material is not biodegradable under environmental conditions.
10-day Window: Fail
**Biodegradation:** < 41 %
**Exposure time:** 28 d
**Method:** OECD Test Guideline 301F or Equivalent
10-day Window: Not applicable
**Biodegradation:** 86 %
**Exposure time:** 28 d
**Method:** OECD Test Guideline 302B or Equivalent

**Theoretical Oxygen Demand:** 2.37 mg/mg

**Biological oxygen demand (BOD)**

| Incubation Time | BOD |
|---|---|
| 5 d | 5 % |
| 10 d | 8 % |
| 20 d | 20 % |
| 28 d | 33 % |

**Bioaccumulative potential**

**Bioaccumulation:** No data available.

**Mobility in soil**

No data available.

## 13. DISPOSAL CONSIDERATIONS

**Disposal methods:** DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. AS YOUR SUPPLIER, WE HAVE NO CONTROL OVER THE MANAGEMENT PRACTICES OR

MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION: Composition Information. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Recycler. Reclaimer. Incinerator or other thermal destruction device.

## 14. TRANSPORT INFORMATION

**DOT**

Not regulated for transport

**Reportable Quantity**

**Classification for SEA transport (IMO-IMDG):**

Not regulated for transport

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

Consult IMO regulations before transporting ocean bulk

**Classification for AIR transport (IATA/ICAO):**

Not regulated for transport

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

## 15. REGULATORY INFORMATION

**OSHA Hazard Communication Standard**
**Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312**
This product is not a hazardous chemical under 29CFR 1910.1200, and therefore is not covered by Title III of SARA.

**Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313**
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**Pennsylvania Worker and Community Right-To-Know Act:**
To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

**California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)**
This product contains no listed substances knownto the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

**United States TSCA Inventory (US.TSCA)**
All components of this product are in compliance with the inventory listing requirements of the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

## 16. OTHER INFORMATION

**Hazard Rating System**
**NFPA**

| Health | Fire | Reactivity |
|---|---|---|
| 1 | 1 | 0 |

**Revision**
Identification Number: 101199094 / A001 / Issue Date: 09/15/2014 / Version: 8.0
Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

**Information Source and References**
This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

THE DOW CHEMICAL COMPANY urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.

# Material Safety Data Sheet




## 1 - Chemical Product and Company Identification

| | |
|---|---|
| **Manufacturer: WD-40 Company**<br>**Address: 1061 Cudahy Place (92110)**<br>**P.O. Box 80607**<br>**San Diego, California, USA**<br>**92138 –0607**<br>**Telephone:**<br>**Emergency only: 1-888-324-7596 (PROSAR)**<br>**Information: 1-888-324-7596**<br>**Chemical Spills: 1-800-424-9300 (Chemtrec)**<br>**1-703-527-3887 (International Calls)** | **Chemical Name: Organic Mixture**<br><br>**Trade Name: WD-40 Bulk Liquid**<br><br>**Product Use: Lubricant, Penetrant, Drives Out Moisture, Removes and Protects Surfaces From Corrosion**<br><br>**MSDS Date Of Preparation: 3/11/10** |

## 2 – Hazards Identification

**Emergency Overview:**
**DANGER**! Harmful or fatal if swallowed. Combustible Liquid. If swallowed, may be aspirated and cause lung damage. May cause eye irritation. Avoid eye contact. Use with adequate ventilation. Keep away from heat, sparks and all other sources of ignition.

**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.
**Medical Conditions Aggravated by Exposure:** Preexisting eye, skin and respiratory conditions may be aggravated by exposure.

**Suspected Cancer Agent:**
Yes No X

## 3 - Composition/Information on Ingredients

| Ingredient | CAS # | Weight Percent |
|---|---|---|
| Aliphatic Hydrocarbon | 64742-47-8 | 45-50 |
| Petroleum Base Oil | 64742-58-1<br>64742-53-6<br>64742-56-9<br>64742-65-0 | <25 |
| LVP Aliphatic Hydrocarbon | 64742-47-8 | 12-18 |
| Surfactant | Proprietary | <2 |
| Non-Hazardous Ingredients | Mixture | <10 |

**See Section 8 for Exposure Limits**

## 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.

**5 – Fire Fighting Measures**

**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.
**Special Fire Fighting Procedures**: Firefighters should always wear positive pressure self-contained breathing apparatus and full protective clothing. Cool fire-exposed containers with water.
**Unusual Fire and Explosion Hazards**: Combustible liquid and vapor. Vapors are heavier than air and may travel along surfaces to remote ignition sources and flash back.

**6 – Accidental Release Measures**

Wear appropriate protective clothing (see Section 8). Eliminate all sources of ignition and ventilate area. 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**

**Handling:** Avoid contact with eyes. Avoid prolonged contact with skin. Avoid breathing vapors or aerosols. Use with adequate ventilation. Keep away from heat, sparks, hot surfaces and open flames. Wash thoroughly with soap and water after handling. Keep containers closed when not in use. Keep out of the reach of children.
**Storage:** Store in a cool, well-ventilated area, away from incompatible materials. NFPA 30 Class II Liquid.

**8 – Exposure Controls/Personal Protection**

| Chemical | Occupational Exposure Limits |
|---|---|
| Aliphatic Hydrocarbon | 1200 mg/m3 TWA (manufacturer recommended) |
| Petroleum Base Oil | 5 mg/m3 (inhalable) TWA<br>5 mg/m3 TWA OSHA PEL |
| LVP Aliphatic Hydrocarbon | 1200 mg/m3 TWA (manufacturer recommended) |
| Surfactant | None Established |
| Non-Hazardous Ingredients | None Established |

**The Following Controls are Recommended for Normal Consumer Use of this Product**
**Engineering Controls:** Use in a well-ventilated area.
**Personal Protection:**
**Eye Protection:** Avoid eye contact. Safety glasses or goggles recommended.
**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**
**Engineering Controls:** Use adequate general and local exhaust ventilation to maintain exposure levels below that occupational exposure limits.
**Personal Protection:**
**Eye Protection:** Safety goggles recommended where eye contact is possible.
**Skin Protection:** Wear chemical resistant gloves.
**Respiratory Protection:** None required if ventilation is adequate. If the occupational exposure limits are exceeded, wear a NIOSH approved respirator. Respirator selection and use should be based on contaminant type, form and concentration. Follow OSHA 1910.134, ANSI Z88.2 and good Industrial Hygiene practice.
**Work/Hygiene Practices:** Wash with soap and water after handling.

**9 – Physical and Chemical Properties**

| | | | |
|---|---|---|---|
| Boiling Point: | 361 - 369°F (183 - 187°C) | Specific Gravity: | 0.8 – 0.82 @ 60°F |
| Solubility in Water: | Insoluble | pH: | Not Applicable |
| Vapor Pressure: | 1 psi @38°C (100°F) ASTM D323 | Vapor Density: | Greater than 1 |
| Percent Volatile: | 70-75% | VOC: | 412 grams/liter (49.5%) |
| Coefficient of Water/Oil Distribution: | Not Determined | Appearance/Odor | Light amber liquid/mild odor |
| Flash Point: | 122°F (49°C) Tag Open Cup | Flammable Limits: (Solvent Portion) | LEL: 0.6% UEL: 8.0% |
| Pour Point: | -63°C (-81.4°F ) ASTM D-97 | Kinematic Viscosity: | 2.79-2.96cSt @ 100°F |

**10 – Stability and Reactivity**

**Stability:** Stable
**Hazardous Polymerization:** Will not occur.
**Conditions to Avoid:** Avoid heat, sparks, flames and other sources of ignition.
**Incompatibilities:** Strong oxidizing agents.
**Hazardous Decomposition Products:** Carbon monoxide and carbon dioxide.

**11 – Toxicological Information**

The oral toxicity of this product is estimated to be greater than 5,000 mg/kg based on an assessment of the ingredients. This product is not classified as toxic by established criteria. It is an aspiration hazard.
None of the components of this product is listed as a carcinogen or suspected carcinogen or is considered a reproductive hazard.

**12 – Ecological Information**

No data is currently available.

**13 - Disposal Considerations**

If this product becomes a waste, it would be expected to meet the criteria of a RCRA ignitable hazardous waste (D001). However, it is the responsibility of the generator to determine at the time of disposal the proper classification and method of disposal. Dispose in accordance with federal, state, and local regulations.

**14 – Transportation Information_**

DOT Surface Shipping Description: Excepted from Hazmat (49CFR 173.150 (F)) in non-bulk packagings. Bulk Packagings: NA1993, Combustible Liquid, n.o.s. (contains Petroleum Distillates), PG III
IMDG Shipping Description: UN1268, Petroleum Distillates, n.o.s. 3, PG III

**15 – Regulatory Information**

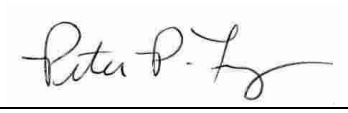
**U.S. Federal Regulations**:
**CERCLA 103 Reportable Quantity:** This product is not subject to CERCLA reporting requirements, however, oil spills are reportable to the National Response Center under the Clean Water Act and many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.
**SARA TITLE III**:
**Hazard Category For Section 311/312:** Acute Health, Fire Hazard
**Section 313 Toxic Chemicals**: This product contains the following chemicals subject to SARA Title III
Section 313 Reporting requirements: None
Section 302 Extremely Hazardous Substances (TPQ): None

**EPA Toxic Substances Control Act (TSCA) Status**: All of the components of this product are listed on the TSCA inventory
**California Safe Drinking Water and Toxic Enforcement Act (Proposition 65**): This product does not contain chemicals regulated under California Proposition 65.
**VOC Regulations**: This product complies with the consumer product VOC limits of CARB, the US EPA and states adopting the OTC VOC rules.
**Canadian Environmental Protection Act**: One of the components is listed on the NDSL. All of the other ingredients are listed on the Canadian Domestic Substances List or exempt from notification.
**Canadian WHMIS Classification**: Class B-3 (Combustible Liquid)
This MSDS has been prepared according to the criteria of the Controlled Products Regulation (CPR) and the MSDS contains all of the information required by the CPR.

**16 – Other Information:**

**HMIS Hazard Rating:**
**Health – 1 (slight hazard), Fire Hazard – 2 (moderate hazard), Reactivity – 0 (minimal hazard)**

Revision Date: March 2010 Supercedes: January 2010



SIGNATURE:_____ TITLE: Director of Global Quality Assurance

REVISION DATE: March 2010 SUPERSEDES: August 2009










# Material Safety Data Sheet

## 1 - Chemical Product and Company Identification

| | |
|---|---|
| Manufacturer: WD-40 Company<br>Address: 1061 Cudahy Place (92110)<br>P.O. Box 80607<br>San Diego, California, USA<br>92138 –0607<br>Telephone:<br>Emergency only: 1-888-324-7596 (PROSAR)<br>Information: 1-888-324-7596<br>Chemical Spills: 1-800-424-9300 (Chemtrec)<br>1-703-527-3887 (International Calls) | Chemical Name: Organic Mixture<br><br>Trade Name: WD-40 Aerosol<br><br>Product Use: Cleaner, Lubricant<br><br>MSDS Date Of Preparation: 3/16/07 |

## 2 – Hazards Identification

**Emergency Overview:**
**DANGER!** Flammable aerosol. Contents under pressure. Harmful of fatal if swallowed. If swallowed, may be aspirated and cause lung damage. Avoid eye contact. Use with adequate ventilation. Keep away from heat, sparks and all other sources of ignition.

**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 mildly 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.
**Medical Conditions Aggravated by Exposure:** Preexisting eye, skin and respiratory conditions may be aggravated by exposure.

**Suspected Cancer Agent:**
Yes No X

## 3 - Composition/Information on Ingredients

| Ingredient | CAS # | Weight Percent |
|---|---|---|
| Aliphatic Hydrocarbon | 64742-47-8<br>64742-48-9<br>64742-88-7 | 45-50 |
| Petroleum Base Oil | 64742-65-0 | 15-25 |
| LVP Aliphatic Hydrocarbon | 64742-47-8 | 12-18 |
| Carbon Dioxide | 124-38-9 | 2-3 |
| Non-Hazardous Ingredients | Mixture | <10 |

## 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.

## 5 – Fire Fighting Measures

**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.
**Special Fire Fighting Procedures**: 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.
**Unusual Fire and Explosion Hazards**: 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.

## 6 – Accidental Release Measures

Wear appropriate protective clothing (see Section 8). Eliminate all sources of ignition and ventilate area. 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

**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.
**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.

## 8 – Exposure Controls/Personal Protection

| Chemical | Occupational Exposure Limits |
|---|---|
| Aliphatic Hydrocarbon | 100 ppm TWA (ACGIH)<br>1200 mg/m3 TWA (manufacturer recommended) |
| Petroleum Base Oil | 5 mg/m3 TWA, 10 mg/m3 STEL ACGIH TLV<br>5 mg/m3 TWA OSHA PEL |
| LVP Aliphatic Hydrocarbon | 1200 mg/m3 TWA (manufacturer recommended) |
| Carbon Dioxide | 5000 ppm TWA (OSHA/ACGIH), 30,000 ppm STEL (ACGIH) |
| Non-Hazardous Ingredients | None Established |

**The Following Controls are Recommended for Normal Consumer Use of this Product**
**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**
**Engineering Controls:** Use adequate general and local exhaust ventilation to maintain exposure levels below that occupational exposure limits.

**Personal Protection:**
**Eye Protection:** Safety goggles recommended where eye contact is possible.
**Skin Protection:** Wear chemical resistant gloves.
**Respiratory Protection:** None required if ventilation is adequate. If the occupational exposure limits are exceeded, wear a NIOSH approved respirator. Respirator selection and use should be based on contaminant type, form and concentration. Follow OSHA 1910.134, ANSI Z88.2 and good Industrial Hygiene practice.
**Work/Hygiene Practices:** Wash with soap and water after handling.

## 9 – Physical and Chemical Properties

| | | | |
|---|---|---|---|
| Boiling Point: | 323°F (minimum) | Specific Gravity: | 0.817 @ 72°F |
| Solubility in Water: | Insoluble | pH: | Not Applicable |
| Vapor Pressure: | 110 PSI @ 70°F | Vapor Density: | Greater than 1 |
| Percent Volatile: | 74% | VOC: | 412 grams/liter (49.5%) |
| Coefficient of Water/Oil Distribution: | Not Determined | Appearance/Odor | Light amber liquid/mild odor |
| Flash Point: | 131°F (concentrate) Tag Closed Cup | Flammable Limits: (Solvent Portion) | LEL: 1.1% UE:: 8.9% |

## 10 – Stability and Reactivity

**Stability:** Stable
**Hazardous Polymerization:** Will not occur.
**Conditions to Avoid:** Avoid heat, sparks, flames and other sources of ignition. Do not puncture or incinerate containers.
**Incompatibilities:** Strong oxidizing agents.
**Hazardous Decomposition Products:** Carbon monoxide and carbon dioxide.

## 11 – Toxicological Information

The oral toxicity of this product is estimated to be greater than 5,000 mg/kg based on an assessment of the ingredients. This product is not classified as toxic by established criteria. It is an aspiration hazard.
None of the components of this product is listed as a carcinogen or suspected carcinogen or is considered a reproductive hazard.

## 12 – Ecological Information

No data is currently available.

## 13 - Disposal Considerations

If this product becomes a waste, it would be expected to meet the criteria of a RCRA ignitable hazardous waste (D001). However, it is the responsibility of the generator to determine at the time of disposal the proper classification and method of disposal. Dispose in accordance with federal, state, and local regulations.

## 14 – Transportation Information

DOT Surface Shipping Description: Consumer Commodity, ORM-D
IMDG Shipping Description: Un1950, Aerosols, 2.1, LTD QTY

## 15 – Regulatory Information

**U.S. Federal Regulations:**
**CERCLA 103 Reportable Quantity:** This product is not subject to CERCLA reporting requirements, however, oil spills are reportable to the National Response Center under the Clean Water Act and many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.
**SARA TITLE III:**
**Hazard Category For Section 311/312:** Acute Health, Fire Hazard, Sudden Release of Pressure

**Section 313 Toxic Chemicals**: This product contains the following chemicals subject to SARA Title III Section 313 Reporting requirements: None
Section 302 Extremely Hazardous Substances (TPQ): None
**EPA Toxic Substances Control Act (TSCA) Status**: All of the components of this product are listed on the TSCA inventory.
**California Safe Drinking Water and Toxic Enforcement Act (Proposition 65)**: This product does not contain chemicals regulated under California Proposition 65.
**VOC Regulations**: This product complies with the consumer product VOC limits of CARB, the US EPA and states adopting the OTC VOC rules.
**Canadian Environmental Protection Act**: All of the ingredients are listed on the Canadian Domestic Substances List or exempt from notification
**Canadian WHMIS Classification**: Class B-5 (Flammable Aerosol)
This MSDS has been prepared according to the criteria of the Controlled Products Regulation (CPR) and the MSDS contains all of the information required by the CPR.

**16 – Other Information:**

**HMIS Hazard Rating:**
**Health – 1 (slight hazard), Fire Hazard – 4 (severe hazard), Reactivity – 0 (minimal hazard)**

SIGNATURE: Peter P. Lyon

TITLE: Director of Global Quality Assurance

REVISION DATE: 3/5/2009

SUPERSEDES: May 2007

# Material Safety Data Sheet

Form Release
CHLQ-003

## SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

**Manufacturer** **: RIGHT POINTE COMPANY**
**Address** : 234 Harvestore Drive
: P.O. BOX 467
: DeKalb, IL 60115
**Telephone** : 888-755-5700
**Fax** : 815-754-5702

**Mfg. code I.D.** : CHLQ-003

**Trade Name** **: Form Release**

**- HMIS -**

| | |
|---|---|
| **\|Health** | **\| 1 \|** |
| **\|Flammability** | **\| 1 \|** |
| **\|Reactivity** | **\| 0 \|** |
| **\|Personal Protection** | **\| \|** |

**(Hazard Rating: 0=Least,1=Slight,2=Moderate,3=High,4=Extreme,*=Chronic)**

## SECTION 2 - HAZARDOUS COMPONENTS & OCCUPATIONAL EXPOSURE LIMITS

| Component | CAS# | % by weight | SARA 313 | OSHA: PEL/TLV | ACGIH: TLV/TWA |
|---|---|---|---|---|---|
| Light Naphthenic Petroleum Oil | 64742-53-6 | 80 – 100% | No | 5 mg/m$^3$ | 5 mg/m$^3$ |

## SECTION 3 - PHYSICAL DATA

| | | | | | |
|---|---|---|---|---|---|
| Boiling Point | : | 346°F | Vapor Density | : | >1 |
| Evaporation Rate | : | <1 | Wt per Gallon | : | 0.85 – 0.90 |

## SECTION 4 - HEALTH INFORMATION

**EYE CONTACT**: Product may cause slight irritation.
**SKIN CONTACT**: Irritation can cause de-fatting of the skin, which can lead to dermatitis.
**INHALATION:** Product may be irritating to the throat, nose, and/or respiratory tract. Prolonged exposure to high vapor concentrations may cause headache, loss of coordination, and/or fatigue.
**INGESTION:** Ingestion of excessive amounts may cause drowsiness, dizziness, headache, and/or fatigue. Product is slightly toxic but still may cause irritation to the gastrointestinal tract through consumption.
**AGGRAVATED MEDICAL CONDITIONS:** Pre-existing conditions (such as eye, skin, and respiratory disorders) may be aggravated through exposure of this material.
**OTHER HEALTH EFFECTS**: None known.

## SECTION 5 - EMERGENCY AND FIRST AID PROCEDURES

**EYE CONTACT:** Move victim to an area with fresh air and flush the eyes for at least 15 minutes with water. If irritation continues, seek medical help.
**SKIN CONTACT**: Remove any contaminated clothing and wash exposed skin with soap and water. If redness or swelling persists, seek medical attention.
**INHALATION:** Move victim to an area with fresh air and away from the material. If breathing problems develop and/or irritation continues, have a qualified person administer oxygen and contact a physician immediately. If the victim is not breathing, perform artificial respiration and seek immediate medical attention.
**INGESTION:** Do NOT induce vomiting. If victim does start to vomit, keep his/her head below the hips to prevent aspiration into the lungs. If victim is conscious, dilute by giving water or milk. Contact a physician or poison control facility and transport the victim to emergency facilities immediately.

## SECTION 6 - FIRE AND EXPLOSION HAZARDS

**Flash Point:** 195°F
**Flammability Classification:** NFPA : Combustible Liquid – class IIIA
DOT : Not regulated

**Extinguishing Media:** Water, foam, dry chemical, or $CO_2$
**Unusual Fire/Explosion Hazards:** None recognized.
**Special Fire Fighting Procedure:** None recognized.

## SECTION 7 - REACTIVITY

| | | |
|---|---|---|
| **Stability** | : | Stable |
| **Hazardous Decomposition Products** | : | Carbon dioxide, monoxide. Do not breathe fumes. Wear protective equipment. |
| **Hazardous Polymerization** | : | Will not occur. |

## SECTION 8 - EMPLOYEE PROTECTION

**CLOTHING:** Cover eyes with safety glasses/goggles or splash shield. Do not wear contact lenses. Handlers should also wear long sleeves, pants that cover entire legs, and gloves to minimize skin exposure.

**BREATHING:** Handlers should use this product in well-ventilated areas only to prevent exposure to higher vapor concentrations. If exposure exceeds the PEL/TLV, use the appropriate NIOSH approved respirator.

## SECTION 9 - ENVIRONMENTAL PROTECTION

**SPILLS:** Clear area of all personnel not wearing appropriate protective gear (including respirator). Dike and contain. Stop the leak. Water fog will suppress any vapor cloud that forms. Remove with vacuum or pump equipment. Use absorbent media for remaining residue. Trace residue can be removed from site with a clean water flush. Observe all pertinent local, state and federal regulations on disposal of water-based chemical compounds.

## SECTION 10 - Other Information

Supersedes MSDS Dated: All before December 01, 2009 Significant changes from the original MSDS format

Right Pointe Company believes this information is accurate but not all-inclusive in all circumstances. It is the responsibility of the user to determine suitability of the material for their purposes. No warranty, expressed or implied, is given.

# Material Safety Data Sheet

## SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

## Chevron RPM® Heavy Duty Motor Oil

**Product Use:** Engine Oil
**Product Number(s):** CPS225044, CPS225048
**Synonyms:** Chevron RPM® Heavy Duty Motor Oil SAE 10W-30, Chevron RPM® Heavy Duty Motor Oil SAE 15W-40
**Company Identification**
Chevron Products Company
a division of Chevron U.S.A. Inc.
6001 Bollinger Canyon Rd.
San Ramon, CA 94583
United States of America
www.chevronlubricants.com

**Transportation Emergency Response**
CHEMTREC: (800) 424-9300 or (703) 527-3887
**Health Emergency**
Chevron Emergency Information Center: Located in the USA. International collect calls accepted. (800) 231-0623 or (510) 231-0623
**Product Information**
email : lubemsds@chevron.com
Product Information: (800) LUBE TEK
MSDS Requests: (800) 414-6737

## SECTION 2 COMPOSITION/ INFORMATION ON INGREDIENTS

| COMPONENTS | CAS NUMBER | AMOUNT |
|---|---|---|
| Highly refined mineral oil (C15 - C50) | Mixture | 60 - 100 %weight |
| Zinc dialkyldithiophosphate | 68649-42-3 | 3 - 7 %weight |

## SECTION 3 HAZARDS IDENTIFICATION

**IMMEDIATE HEALTH EFFECTS**
**Eye:** Not expected to cause prolonged or significant eye irritation.
**Skin:** Contact with the skin is not expected to cause prolonged or significant irritation. Contact with the skin is not expected to cause an allergic skin response. Not expected to be harmful to internal organs if absorbed through the skin.
**Ingestion:** Not expected to be harmful if swallowed.
**Inhalation:** Not expected to be harmful if inhaled. Contains a petroleum-based mineral oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended mineral oil mist exposure limit. Symptoms of respiratory irritation

may include coughing and difficulty breathing.

## SECTION 4 FIRST AID MEASURES

**Eye:** No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.
**Skin:** No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.
**Ingestion:** No specific first aid measures are required. Do not induce vomiting. As a precaution, get medical advice.
**Inhalation:** No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs.

## SECTION 5 FIRE FIGHTING MEASURES

**FIRE CLASSIFICATION:**
OSHA Classification (29 CFR 1910.1200): Not classified by OSHA as flammable or combustible.

**NFPA RATINGS:** Health: 0 Flammability: 1 Reactivity: 0

**FLAMMABLE PROPERTIES:**
**Flashpoint:** (ASTM D92) 204 °C (399 °F) Minimum
**Autoignition:** No data available
**Flammability (Explosive) Limits (% by volume in air):** Lower: Not Applicable Upper: Not Applicable

**EXTINGUISHING MEDIA:** Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

**PROTECTION OF FIRE FIGHTERS:**
**Fire Fighting Instructions:** This material will burn although it is not easily ignited. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.
**Combustion Products:** Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion.

## SECTION 6 ACCIDENTAL RELEASE MEASURES

**Protective Measures:** Eliminate all sources of ignition in vicinity of spilled material.
**Spill Management:** Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.
**Reporting:** Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required.

## SECTION 7 HANDLING AND STORAGE

**Precautionary Measures:** Keep out of the reach of children.

**General Handling Information:** Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.
**Static Hazard:** Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures. For more information, refer to OSHA Standard 29 CFR 1910.106, 'Flammable and Combustible Liquids', National Fire Protection Association (NFPA 77, 'Recommended Practice on Static Electricity', and/or the American Petroleum Institute (API) Recommended Practice 2003, 'Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents'.
**Container Warnings:** Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

## SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

**GENERAL CONSIDERATIONS:**
Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

**ENGINEERING CONTROLS:**
Use in a well-ventilated area.

**PERSONAL PROTECTIVE EQUIPMENT**
**Eye/Face Protection:** No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.
**Skin Protection:** No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: 4H (PE/EVAL), Nitrile Rubber, Silver Shield, Viton.
**Respiratory Protection:** No respiratory protection is normally required.
If user operations generate an oil mist, determine if airborne concentrations are below the occupational exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection from the measured concentrations of this material. For air-purifying respirators use a particulate cartridge. Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

**Occupational Exposure Limits:**

| Component | Agency | TWA | STEL | Ceiling | Notation |
|---|---|---|---|---|---|
| Highly refined mineral oil (C15 - C50) | ACGIH | 5 mg/m3 | 10 mg/m3 | -- | -- |
| Highly refined mineral oil (C15 - C50) | OSHA Z-1 | 5 mg/m3 | -- | -- | -- |

Consult local authorities for appropriate values.

## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

**Color:** Brown
**Physical State:** Liquid
**Odor:** Petroleum odor
**pH:** Not Applicable
**Vapor Pressure:** <0.01 mmHg @ 37.8 °C (100 °F)
**Vapor Density (Air = 1):** >1
**Boiling Point:** >315°C (599°F)
**Solubility:** Soluble in hydrocarbons; insoluble in water
**Freezing Point:** Not Applicable
**Melting Point:** Not Applicable
**Specific Gravity:** 0.87 - 0.89 @ 15.6°C (60.1°F) / 15.6°C (60.1°F)
**Density:** 0.87 kg/l @ 15°C (59°F)
**Viscosity:** 10.7 - 19.3 mm2/s @ 100°C (212°F)
**Evaporation Rate:** No data available

## SECTION 10 STABILITY AND REACTIVITY

**Chemical Stability:** This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.
**Incompatibility With Other Materials:** May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.
**Hazardous Decomposition Products:** None known (None expected)
**Hazardous Polymerization:** Hazardous polymerization will not occur.

## SECTION 11 TOXICOLOGICAL INFORMATION

**IMMEDIATE HEALTH EFFECTS**
**Eye Irritation:** The eye irritation hazard is based on evaluation of data for similar materials or product components.
**Skin Irritation:** The skin irritation hazard is based on evaluation of data for similar materials or product components.
**Skin Sensitization:** The skin sensitization hazard is based on evaluation of data for similar materials or product components.
**Acute Dermal Toxicity:** The acute dermal toxicity hazard is based on evaluation of data for similar materials or product components.

**Acute Oral Toxicity:** The acute oral toxicity hazard is based on evaluation of data for similar materials or product components.

**Acute Inhalation Toxicity:** The acute inhalation toxicity hazard is based on evaluation of data for similar materials or product components.

**ADDITIONAL TOXICOLOGY INFORMATION:**
This product contains petroleum base oils which may be refined by various processes including severe solvent extraction, severe hydrocracking, or severe hydrotreating. None of the oils requires a cancer warning under the OSHA Hazard Communication Standard (29 CFR 1910.1200). These oils have not been listed in the National Toxicology Program (NTP) Annual Report nor have they been classified by the International Agency for Research on Cancer (IARC) as; carcinogenic to humans (Group 1), probably carcinogenic to humans (Group 2A), or possibly carcinogenic to humans (Group 2B). These oils have not been classified by the American Conference of Governmental Industrial Hygienists (ACGIH) as: confirmed

human carcinogen (A1), suspected human carcinogen (A2), or confirmed animal carcinogen with unknown relevance to humans (A3). During use in engines, contamination of oil with low levels of cancer-causing combustion products occurs. Used motor oils have been shown to cause skin cancer in mice following repeated application and continuous exposure. Brief or intermittent skin contact with used motor oil is not expected to have serious effects in humans if the oil is thoroughly removed by washing with soap and water.

## SECTION 12 ECOLOGICAL INFORMATION

**ECOTOXICITY**
This material is not expected to be harmful to aquatic organisms. The ecotoxicity hazard is based on an evaluation of data for the components or a similar material.

**ENVIRONMENTAL FATE**
**Ready Biodegradability:** This material is not expected to be readily biodegradable.

## SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. Oil collection services are available for used oil recycling or disposal. Place contaminated materials in containers and dispose of in a manner consistent with applicable regulations. Contact your sales representative or local environmental or health authorities for approved disposal or recycling methods.

## SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

**DOT Shipping Description:** PETROLEUM LUBRICATING OIL, NOT REGULATED AS A HAZARDOUS MATERIAL FOR TRANSPORTATION UNDER 49 CFR
**Additional Information:**NOT HAZARDOUS BY U.S. DOT. ADR/RID HAZARD CLASS NOT APPLICABLE.

**IMO/IMDG Shipping Description:** PETROLEUM LUBRICATING OIL; NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER THE IMDG CODE

**ICAO/IATA Shipping Description:** PETROLEUM LUBRICATING OIL; NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER ICAO TI OR IATA DGR

## SECTION 15 REGULATORY INFORMATION

**EPCRA 311/312 CATEGORIES:**

| | | |
|---|---|---|
| 1. | Immediate (Acute) Health Effects: | NO |
| 2. | Delayed (Chronic) Health Effects: | NO |
| 3. | Fire Hazard: | NO |
| 4. | Sudden Release of Pressure Hazard: | NO |
| 5. | Reactivity Hazard: | NO |

REGULATORY LISTS SEARCHED:
01-1=IARC Group 1 03=EPCRA 313

| | |
|---|---|
| 01-2A=IARC Group 2A | 04=CA Proposition 65 |
| 01-2B=IARC Group 2B | 05=MA RTK |
| 02=NTP Carcinogen | 06=NJ RTK |
| | 07=PA RTK |

The following components of this material are found on the regulatory lists indicated.
Zinc dialkyldithiophosphate 03, 06

**CHEMICAL INVENTORIES:**
All components comply with the following chemical inventory requirements: DSL (Canada), KECI (Korea), PICCS (Philippines), TSCA (United States).
One or more components is listed on ELINCS (European Union). Secondary notification by the importer may be required. All other components are listed or exempted from listing on EINECS.

One or more components does not comply with the following chemical inventory requirements: AICS (Australia), ENCS (Japan).

**NEW JERSEY RTK CLASSIFICATION:**
Under the New Jersey Right-to-Know Act L. 1983 Chapter 315 N.J.S.A. 34:5A-1 et. seq., the product is to be identified as follows: PETROLEUM OIL (Motor oil)

**WHMIS CLASSIFICATION:**
This product is not considered a controlled product according to the criteria of the Canadian Controlled Products Regulations.

## SECTION 16 OTHER INFORMATION

**NFPA RATINGS:** Health: 0 Flammability: 1 Reactivity: 0

**HMIS RATINGS:** Health: 1 Flammability: 1 Reactivity: 0
(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

**LABEL RECOMMENDATION:**
Label Category : ENGINE OIL 1 - ENG1

**REVISION STATEMENT:** This revision updates the following sections of this Material Safety Data Sheet: 3,9,16
**Revision Date:** MARCH 16, 2011

**ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:**

| | |
|---|---|
| TLV - Threshold Limit Value | TWA - Time Weighted Average |
| STEL - Short-term Exposure Limit | PEL - Permissible Exposure Limit |
| | CAS - Chemical Abstract Service Number |
| ACGIH - American Conference of Government Industrial Hygienists | IMO/IMDG - International Maritime Dangerous Goods Code |
| API - American Petroleum Institute | MSDS - Material Safety Data Sheet |
| CVX - Chevron | NFPA - National Fire Protection Association (USA) |
| DOT - Department of Transportation (USA) | NTP - National Toxicology Program (USA) |

| | |
|---|---|
| IARC - International Agency for Research on Cancer | OSHA - Occupational Safety and Health Administration |

Prepared according to the OSHA Hazard Communication Standard (29 CFR 1910.1200) and the ANSI MSDS Standard (Z400.1) by the Chevron Energy Technology Company, 100 Chevron Way, Richmond, California 94802.

**The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.**

**This MSDS has been discontinued on 11/18/2011. The Revision date indicates the last time the MSDS was reviewed.**

# Material Safety Data Sheet

## SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

## Havoline® Synthetic Motor Oil

**Product Use:** Engine Oil
**Product Number(s):** CPS223414, CPS223422
**Synonyms:** Havoline® Synthetic Motor Oil SAE 5W-20, Havoline® Synthetic Motor Oil SAE 5W-40
**Company Identification**
Chevron Products Company
a division of Chevron U.S.A. Inc.
6001 Bollinger Canyon Road
San Ramon, CA 94583
United States of America

**Transportation Emergency Response**
CHEMTREC: (800) 424-9300 or (703) 527-3887
**Health Emergency**
Chevron Emergency Information Center: Located in the USA. International collect calls accepted. (800) 231-0623 or (510) 231-0623
**Product Information**
email : lubemsds@chevron.com
Product Information: 800-LUBE-TEK
MSDS Requests: 800-414-6737

## SECTION 2 COMPOSITION/ INFORMATION ON INGREDIENTS

| COMPONENTS | CAS NUMBER | AMOUNT |
|---|---|---|
| Highly refined mineral oil (C15 - C50) | Mixture | 60 - 100 %weight |
| Zinc dialkyldithiophosphate | 68649-42-3 | 0.5 - 1.5 %weight |

## SECTION 3 HAZARDS IDENTIFICATION

**IMMEDIATE HEALTH EFFECTS**
**Eye:** Not expected to cause prolonged or significant eye irritation.
**Skin:** Contact with the skin is not expected to cause prolonged or significant irritation. Contact with the skin is not expected to cause an allergic skin response. Not expected to be harmful to internal organs if absorbed through the skin.

**Ingestion:** Not expected to be harmful if swallowed.
**Inhalation:** Not expected to be harmful if inhaled. Contains a petroleum-based mineral oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended mineral oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficulty breathing.

## SECTION 4 FIRST AID MEASURES

**Eye:** No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.
**Skin:** No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.
**Ingestion:** No specific first aid measures are required. Do not induce vomiting. As a precaution, get medical advice.
**Inhalation:** No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs.

## SECTION 5 FIRE FIGHTING MEASURES

**FIRE CLASSIFICATION:**
OSHA Classification (29 CFR 1910.1200): Not classified by OSHA as flammable or combustible.

**NFPA RATINGS:** Health: 0 Flammability: 1 Reactivity: 0

**FLAMMABLE PROPERTIES:**
**Flashpoint:** (Cleveland Open Cup) 180 °C (356 °F) Minimum
**Autoignition:** No data available
**Flammability (Explosive) Limits (% by volume in air):** Lower: Not Applicable Upper: Not Applicable

**EXTINGUISHING MEDIA:** Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

**PROTECTION OF FIRE FIGHTERS:**
**Fire Fighting Instructions:** This material will burn although it is not easily ignited. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.
**Combustion Products:** Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion.

## SECTION 6 ACCIDENTAL RELEASE MEASURES

**Protective Measures:** Eliminate all sources of ignition in vicinity of spilled material.
**Spill Management:** Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner

consistent with applicable regulations.
**Reporting:** Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required.

## SECTION 7 HANDLING AND STORAGE

**Precautionary Measures:** Keep out of the reach of children.
**General Handling Information:** Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.
**Static Hazard:** Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures. For more information, refer to OSHA Standard 29 CFR 1910.106, 'Flammable and Combustible Liquids', National Fire Protection Association (NFPA 77, 'Recommended Practice on Static Electricity', and/or the American Petroleum Institute (API) Recommended Practice 2003, 'Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents'.
**Container Warnings:** Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

## SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

**GENERAL CONSIDERATIONS:**
Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

**ENGINEERING CONTROLS:**
Use in a well-ventilated area.

**PERSONAL PROTECTIVE EQUIPMENT**
**Eye/Face Protection:** No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.
**Skin Protection:** No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: 4H (PE/EVAL), Nitrile Rubber, Silver Shield, Viton.
**Respiratory Protection:** No respiratory protection is normally required.
If user operations generate an oil mist, determine if airborne concentrations are below the occupational exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection from the measured concentrations of this material. For air-purifying respirators use a particulate cartridge. Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

**Occupational Exposure Limits:**

| Component | Agency | TWA | STEL | Ceiling | Notation |
|---|---|---|---|---|---|
| Highly refined mineral oil (C15 - C50) | ACGIH | 5 mg/m3 | 10 mg/m3 | -- | -- |
| Highly refined mineral oil (C15 - C50) | OSHA Z-1 | 5 mg/m3 | -- | -- | -- |

Consult local authorities for appropriate values.

## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

**Color:** Amber
**Physical State:** Liquid
**Odor:** Petroleum odor
**pH:** Not Applicable
**Vapor Pressure:** <0.01 mmHg Maximum @ 37.8 °C (100 °F)
**Vapor Density (Air = 1):** >1 Minimum
**Boiling Point:** >315°C (599°F) Minimum
**Solubility:** Soluble in hydrocarbons; insoluble in water
**Freezing Point:** Not Applicable
**Specific Gravity:** 0.85 @ 15.6°C (60.1°F) / 15.6°C (60.1°F)
**Density:** 0.85 @ 15°C (59°F) (Typical)
**Viscosity:** 8.5 mm2/s @ 100°C (212°F) Minimum

## SECTION 10 STABILITY AND REACTIVITY

**Chemical Stability:** This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.
**Incompatibility With Other Materials:** May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.
**Hazardous Decomposition Products:** None known (None expected)
**Hazardous Polymerization:** Hazardous polymerization will not occur.

## SECTION 11 TOXICOLOGICAL INFORMATION

**IMMEDIATE HEALTH EFFECTS**
**Eye Irritation:** The eye irritation hazard is based on evaluation of data for similar materials or product components.
**Skin Irritation:** The skin irritation hazard is based on evaluation of data for similar materials or product components.
**Skin Sensitization:** The skin sensitization hazard is based on evaluation of data for similar materials or product components.
**Acute Dermal Toxicity:** The acute dermal toxicity hazard is based on evaluation of data for similar materials or product components.

**Acute Oral Toxicity:** The acute oral toxicity hazard is based on evaluation of data for similar materials or product components.

**Acute Inhalation Toxicity:** The acute inhalation toxicity hazard is based on evaluation of data for similar materials or product components.

**ADDITIONAL TOXICOLOGY INFORMATION:**

This product contains petroleum base oils which may be refined by various processes including severe solvent extraction, severe hydrocracking, or severe hydrotreating. None of the oils requires a cancer warning under the OSHA Hazard Communication Standard (29 CFR 1910.1200). These oils have not been listed in the National Toxicology Program (NTP) Annual Report nor have they been classified by the International Agency for Research on Cancer (IARC) as; carcinogenic to humans (Group 1), probably carcinogenic to humans (Group 2A), or possibly carcinogenic to humans (Group 2B). These oils have not been classified by the American Conference of Governmental Industrial Hygienists (ACGIH) as: confirmed human carcinogen (A1), suspected human carcinogen (A2), or confirmed animal carcinogen with unknown relevance to humans (A3). During use in engines, contamination of oil with low levels of cancer-causing combustion products occurs. Used motor oils have been shown to cause skin cancer in mice following repeated application and continuous exposure. Brief or intermittent skin contact with used motor oil is not expected to have serious effects in humans if the oil is thoroughly removed by washing with soap and water.

## SECTION 12 ECOLOGICAL INFORMATION

**ECOTOXICITY**

This material is not expected to be harmful to aquatic organisms. The ecotoxicity hazard is based on an evaluation of data for the components or a similar material.

**ENVIRONMENTAL FATE**

**Ready Biodegradability:** 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.

## SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. Oil collection services are available for used oil recycling or disposal. Place contaminated materials in containers and dispose of in a manner consistent with applicable regulations. Contact your sales representative or local environmental or health authorities for approved disposal or recycling methods.

## SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

**DOT Shipping Description:** PETROLEUM LUBRICATING OIL, NOT REGULATED AS A HAZARDOUS MATERIAL FOR TRANSPORTATION UNDER 49 CFR

**IMO/IMDG Shipping Description:** PETROLEUM LUBRICATING OIL; NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER THE IMDG CODE

**ICAO/IATA Shipping Description:** PETROLEUM LUBRICATING OIL; NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER ICAO TI OR IATA DGR

## SECTION 15 REGULATORY INFORMATION

**EPCRA 311/312 CATEGORIES:**

1. Immediate (Acute) Health Effects: NO
2. Delayed (Chronic) Health Effects: NO
3. Fire Hazard: NO
4. Sudden Release of Pressure Hazard: NO
5. Reactivity Hazard: NO

REGULATORY LISTS SEARCHED:

| | |
|---|---|
| 01-1=IARC Group 1 | 03=EPCRA 313 |
| 01-2A=IARC Group 2A | 04=CA Proposition 65 |
| 01-2B=IARC Group 2B | 05=MA RTK |
| 02=NTP Carcinogen | 06=NJ RTK |
| | 07=PA RTK |

The following components of this material are found on the regulatory lists indicated.
Zinc dialkyldithiophosphate 03, 06

**CHEMICAL INVENTORIES:**
All components comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), EINECS (European Union), ENCS (Japan), IECSC (China), KECI (Korea), PICCS (Philippines), TSCA (United States).

**NEW JERSEY RTK CLASSIFICATION:**
Under the New Jersey Right-to-Know Act L. 1983 Chapter 315 N.J.S.A. 34:5A-1 et. seq., the product is to be identified as follows: PETROLEUM OIL (Motor oil)

**WHMIS CLASSIFICATION:**
This product is not considered a controlled product according to the criteria of the Canadian Controlled Products Regulations.

## SECTION 16 OTHER INFORMATION

**NFPA RATINGS:** Health: 0 Flammability: 1 Reactivity: 0

**HMIS RATINGS:** Health: 1 Flammability: 1 Reactivity: 0
(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

**LABEL RECOMMENDATION:**
Label Category : ENGINE OIL 1 - ENG1

**REVISION STATEMENT:** This is a new Material Safety Data Sheet.
**Revision Date:** SEPTEMBER 15, 2011

**ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:**

| | |
|---|---|
| TLV - Threshold Limit Value | TWA - Time Weighted Average |
| STEL - Short-term Exposure Limit | PEL - Permissible Exposure Limit |
| | CAS - Chemical Abstract Service Number |

| | |
|---|---|
| ACGIH - American Conference of Government Industrial Hygienists | IMO/IMDG - International Maritime Dangerous Goods Code |
| API - American Petroleum Institute | MSDS - Material Safety Data Sheet |
| CVX - Chevron | NFPA - National Fire Protection Association (USA) |
| DOT - Department of Transportation (USA) | NTP - National Toxicology Program (USA) |
| IARC - International Agency for Research on Cancer | OSHA - Occupational Safety and Health Administration |

Prepared according to the OSHA Hazard Communication Standard (29 CFR 1910.1200) and the ANSI MSDS Standard (Z400.1) by the Chevron Energy Technology Company, 100 Chevron Way, Richmond, California 94802.

**The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.**

HOWES LUBRICATOR® PRODUCTS

Professional Grade Performance Since 1920

# MATERIAL SAFETY DATA SHEET

Howes Multi-Purpose Penetrating Oil Liquid



## Section 1. PRODUCT AND COMPANY IDENTIFICATION

| | |
|---|---|
| Product Name: | Howes Multi-Purpose Penetrating Oil Liquid |
| Company Identification: | R.B. Howes & Co., Inc.<br>60 Ocean State Drive<br>North Kingstown, RI 02852 |
| Emergency Telephone Number: | Chemtrec 1-800-424-9300 |

## Section 2. COMPOSITION/INFORMATION ON INGREDIENTS

| Component | CAS # | % by Volume |
|---|---|---|
| Barium Petroleum Sulfonate | 61790-48-5 | 1 – 2.5 |
| Antimony Compound (NJTSR No. 800983-5015P) | | .25 –.75 |

## Section 3. HAZARDS IDENTIFICATION

### Emergency Overview

Light amber oil-like liquid with distinctive odor. Prolonged or repeated skin contact may cause skin irritation. Ingestion harmful or fatal if not treated. Prolonged exposure to heavy concentrations of fumes may cause irritation to mucus membranes and airway. Respiratory diseases such as asthma and skin conditions such as rashes, cuts or similar skin diseases are generally aggravated by exposure. Combustible. Do not handle near excessive heat, sparks, flame or strong oxidants. Incompatible with (material to avoid) strong oxidants like liquid chlorine or concentrated oxygen. Presents a slipping hazard if spilled.

### Primary Routes of Exposure

Eyes, skin, ingestion and inhalation

### Potential Health Effects

| | |
|---|---|
| Eye Contact: | Can cause redness and mild irritation. |
| Skin Contact: | Can cause redness and mild irritation with prolonged contact. |
| Ingestion: | Can cause cramps and nausea. |
| Inhalation: | Repeated or prolonged exposure may irritate the respiratory tract. |

## Section 4. FIRST AID MEASURES

Eye contact:
Flush with water for 15 minutes, or until irritation subsides.

Skin contact:
Wash with soap and water.

Ingestion:
Do not induce vomiting. Water may be given slowly. Contact physician immediately.

Inhalation:
Remove to fresh air.

Additionally:
In all cases, if symptoms persist, contact physician.

## Section 5. FIRE FIGHTING MEASURES

Flash point:
154° F / 67.8°C (Closed Cup Pensky Martens).

Autoignition temperature:
Data not available.

Upper flammable limit:
Data not available.

Lower flammable limit:
Data not available.

Extinguishing media:
Foam, CO2, water fog or spray.

Fire fighting equipment:
Recommend wearing self contained breathing apparatus. Avoid breathing vapors or fumes. Cool exposed containers with water spray.

Unusual fire and explosion hazard:
Combustible liquid. May form combustible mixtures at or above the flash point. Empty product containers may contain product residue. Do not pressurize, cut, heat, weld or expose containers to flame or other sources of ignition.

## Section 6. ACCIDENTAL RELEASE MEASURE

Soak up the spill with oil absorbents. Place residue in suitable, covered, properly labeled container. Dispose in accordance with federal, state and local laws.

## Section 7. HANDLING AND STORAGE

Keep away from sources of ignition. Keep container closed when not in use.

## Section 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

| | | | |
|---|---|---|---|
| Exposure Limits | Barium Petroleum Sulfonate | OSHA TWA: | Not available |
| | Antimony Compound | OSHA TWA: | .5 mg/m$^3$ |

Engineering Controls
Good general ventilation should be sufficient to control airborne levels.

Respiratory Protection
This material does not have established exposure limits. Wear a positive-pressure air-supplied respirator in situations where there may be potential for airborne exposure.

Skin Protection
For brief contact, no precautions other than clean body-covering clothing should be needed. Use chemical resistant gloves such as neoprene.

Eye Protection
Safety glasses with side shield, anti-splash goggles or face shield.

Hygiene Recommendations
Keep an eyewash kit available. If clothing is contaminated, remove clothing and thoroughly wash the affected area. Launder contaminated clothing before reuse. Avoid contact with skin and eyes.

## Section 9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| Appearance: | Light amber |
| Odor: | Distinctive |
| Physical State: | Liquid |
| pH: | Not determined |
| Vapor Pressure: | <.1mm Hg |
| Vapor Density: | >1 (air = 1) |
| Boiling Point: | 327°F / 164°C |
| Freezing Point: | Not determined |
| Solubility in Water: | Insoluble |
| Specific Gravity: | <.9 (H2O = 1) |

## Section 10. STABILITY AND REACTIVITY

| | |
|---|---|
| Stability: | Stable under normal conditions. |
| Conditions to Avoid | Excessive heat, sparks, flames or strong oxidants. |
| Materials to Avoid: | Contact with strong oxidizers like chlorine or concentrated oxygen. |
| Hazardous Decomposition Products / Byproducts: | Under fire conditions: Carbon oxides (CO, CO2) |
| Hazardous Polymerization: | Hazardous polymerization will not occur. |

## Section 11. TOXICOLOGICAL INFORMATION

| | | |
|---|---|---|
| Barium Petroleum Sulfonate | ORAL (LD50): | Acute: 3,000 mg/kg (Rat) |
| Antimony Compound | ORAL (LD50): | Acute: 16,400 mg/kg (Rat) |

## Section 12. ECOLOGICAL INFORMATION

No ecotoxicological studies have been conducted on this product.

## Section 13. DISPOSAL CONSIDERATIONS

Waste management should be in compliance with federal, state and local laws.

## Section 14. TRANSPORT INFORMATION

The information in this section is for reference only and should not take the place of a shipping paper (bill of lading) specific to an order. Please note that the proper Shipping Name / Hazard Class may vary by packaging, properties and mode of transportation. Typical Proper Shipping Names for this product are:

| | |
|---|---|
| Proper Shipping Name: | Petroleum distillates, n.o.s. |
| UN Identification Number: | UN1268 |
| Hazard Class – Primary: | 3 |
| Packing Group: | III |
| Flash Point: | 154° F / 67.8°C |

HAZARDOUS MATERIALS TRANSPORTATION , 49 CFR 173.150

This product may be renamed as Consumer Commodity, ORM-D when it conforms to the provisions of paragraph (b) of section 173.150 and is a "consumer commodity" as defined in subchapter §171.8. In addition to the exceptions provided by paragraph (b), shipments of ORM-D materials are not subject to the shipping paper requirements of subpart C of part 172, unless the material meets the definition of a hazardous substance, hazardous waste, marine pollutant, or are offered for transportation and transported by aircraft, and are eligible for the exceptions provided in §173.156.

## Section 15. REGULATORY INFORMATION

U.S. Regulations:

Clean Air Act (CAA) 112(r) Accidental Release Prevention Substances: No products were found.

Clean Water Act (CWA) 307 Priority Pollutants: No products were found.

Clean Water Act (CWA) 311 Hazardous Substances: No products were found.

CERCLA 302 Hazardous Substances: No products were found.

Proposition 65 California Safe Drinking Water and Toxic Enforcement Act of 1986: No products were found.

SARA 302/304 Emergency Planning and Notification Substances: Barium Petroleum Sulfonate.

SARA 313 Toxic Chemical Notification: Barium Petroleum Sulfonate, Antimony Compound.

TSCA Inventory Status: All components are included or are exempted from listing on the US Toxic Substances Control Act Inventory.

## Section 16. OTHER INFORMATION

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM (HMIS)

| | |
|---|---|
| Health | 1 |
| Flammability | 2 |
| Reactivity | 0 |
| Personal Protection | B |

MSDS PREPARATION

| | |
|---|---|
| Prepared By: | Quality Control Department |
| Date: | February 2008 |

The recommendations and data presented herein are based on sources considered to be reliable. Any use inconsistent with our recommendations may affect the risk characterization. However, no warranty is expressed or implied regarding the accuracy of the data or the results obtained from the use of this information or the use of the product. R.B. Howes & Co., Inc. expressly disclaims all liability for loss or damage, including consequential loss, or injury to persons (including death) arising directly or indirectly from reliance upon the information or use of the material.

# Material Safety Data Sheet

## 1. MATERIAL AND COMPANY IDENTIFICATION

**Material Name** : **FormulaShell Motor Oil SAE 10W-30**

**Manufacturer/Supplier** : **SOPUS Products**
PO Box 4427
Houston, TX 77210-4427
USA

**MSDS Request** : 877-276-7285

**Emergency Telephone Number**
**Spill Information** : 877-242-7400
**Health Information** : 877-504-9351

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

| Chemical Identity | CAS No. | Concentration |
|---|---|---|
| Distillates (petroleum), hydrotreated light paraffinic | 64742-55-8 | 1.00 - 5.00 % |

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

## 3. HAZARDS IDENTIFICATION

**Emergency Overview**

**Appearance and Odour** : Amber. Liquid at room temperature. Slight hydrocarbon.

**Health Hazards** : Not classified as dangerous for supply or conveyance.
**Safety Hazards** : Not classified as flammable but will burn.
**Environmental Hazards** : Not classified as dangerous for the environment.

**Health Hazards** : Not expected to be a health hazard when used under normal conditions.

**Health Hazards**
**Inhalation** : Under normal conditions of use, this is not expected to be a primary route of exposure.
**Skin Contact** : Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.
**Eye Contact** : May cause slight irritation to eyes.
**Ingestion** : Low toxicity if swallowed.
**Other Information** : Used oil may contain harmful impurities.
**Signs and Symptoms** : 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.
**Aggravated Medical Condition** : Pre-existing medical conditions of the following organ(s) or organ system(s) may be aggravated by exposure to this material: Skin.

| | | |
|---|---|---|
| **Environmental Hazards** | : | Not classified as dangerous for the environment. |
| **Additional Information** | : | 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. |

## 4. FIRST AID MEASURES

| | | |
|---|---|---|
| **General Information** | : | Not expected to be a health hazard when used under normal conditions. |
| **Inhalation** | : | No treatment necessary under normal conditions of use. If symptoms persist, obtain medical advice. |
| **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. |
| **Eye Contact** | : | Flush eye with copious quantities of water. If persistent irritation occurs, obtain medical attention. |
| **Ingestion** | : | In general no treatment is necessary unless large quantities are swallowed, however, get medical advice. |
| **Advice to Physician** | : | Treat symptomatically. |

## 5. FIRE FIGHTING MEASURES

Clear fire area of all non-emergency personnel.

| | | |
|---|---|---|
| **Flash point** | : | Typical 400 °C / 752 °F (COC) |
| **Upper / lower Flammability or Explosion limits** | : | Typical 1 - 10 %(V)(based on mineral oil) |
| **Auto ignition temperature** | : | > 320 °C / 608 °F |
| **Specific Hazards** | : | Hazardous combustion products may include: A complex mixture of airborne solid and liquid particulates and gases (smoke). Carbon monoxide. Unidentified organic and inorganic compounds. |
| **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. |
| **Protective Equipment for Firefighters** | : | Proper protective equipment including breathing apparatus must be worn when approaching a fire in a confined space. |

## 6. ACCIDENTAL RELEASE MEASURES

Avoid contact with spilled or released material. For guidance on selection of personal protective equipment see Chapter 8 of this Material Safety Data Sheet. See Chapter 13 for information on disposal. Observe all relevant local and international regulations.

| | | |
|---|---|---|
| **Protective measures** | : | Avoid contact with skin and eyes. Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers. |
| **Clean Up Methods** | : | 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** : Local authorities should be advised if significant spillages cannot be contained.

## 7. HANDLING AND STORAGE

**General Precautions** : Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols. Properly dispose of any contaminated rags or cleaning materials in order to prevent fires. 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.

**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.

**Storage** : Keep container tightly closed and in a cool, well-ventilated place. Use properly labelled and closeable containers. Storage Temperature: 0 - 50 °C / 32 - 122 °F

**Recommended Materials** : For containers or container linings, use mild steel or high density polyethylene.

**Unsuitable Materials** : PVC.

**Additional Information** : Polyethylene containers should not be exposed to high temperatures because of possible risk of distortion.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Occupational Exposure Limits**

| Material | Source | Type | ppm | mg/m3 | Notation |
|---|---|---|---|---|---|
| Oil mist, mineral | ACGIH | TWA(Mist.) | | 5 mg/m3 | |
| Oil mist, mineral | ACGIH | STEL(Mist.) | | 10 mg/m3 | |
| Distillates (petroleum), hydrotreated light paraffinic | ACGIH | TWA(Mist.) | | 5 mg/m3 | |
| Distillates (petroleum), hydrotreated light paraffinic | ACGIH | STEL(Mist.) | | 10 mg/m3 | |

| | | |
|---|---|---|
| **Exposure Controls** | : | 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. |
| **Personal Protective Equipment** | : | Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers. |
| **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 combined particulate/organic gases and vapours [boiling point >65 °C (149 °F)]. |
| **Hand Protection** | : | 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, glove thickness, 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. |
| **Eye Protection** | : | Wear safety glasses or full face shield if splashes are likely to occur. |
| **Protective Clothing** | : | Skin protection not ordinarily required beyond standard issue work clothes. |
| **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. |
| **Environmental Exposure Controls** | : | Minimise release to the environment. An environmental assessment must be made to ensure compliance with local environmental legislation. |

## 9. PHYSICAL AND CHEMICAL PROPERTIES

| | | |
|---|---|---|
| Appearance | : | Amber. Liquid at room temperature. |

| | | |
|---|---|---|
| Odour | : | Slight hydrocarbon. |
| pH | : | Data not available |
| Initial Boiling Point and Boiling Range | : | > 280 °C / 536 °F estimated value(s) |
| Pour point | : | Typical -20 °C / -4 °F |
| Flash point | : | Typical 400 °C / 752 °F (COC) |
| Upper / lower Flammability or Explosion limits | : | Typical 1 - 10 %(V) (based on mineral oil) |
| Auto-ignition temperature | : | > 320 °C / 608 °F |
| Vapour pressure | : | < 0.5 Pa at 20 °C / 68 °F (estimated value(s)) |
| Specific gravity | : | Typical 0.85 |
| Density | : | Typical 7.43 g/cm3 |
| Water solubility | : | Negligible. |
| n-octanol/water partition coefficient (log Pow) | : | > 6 (based on information on similar products) |
| Kinematic viscosity | : | Typical 50 mm2/s at 40 °C / 104 °F |
| Vapour density (air=1) | : | > 1 (estimated value(s)) |
| Evaporation rate (nBuAc=1) | : | Data not available |

## 10. STABILITY AND REACTIVITY

| | | |
|---|---|---|
| **Stability** | : | Stable. |
| **Conditions to Avoid** | : | Extremes of temperature and direct sunlight. |
| **Materials to Avoid** | : | Strong oxidising agents. |
| **Hazardous Decomposition Products** | : | Hazardous decomposition products are not expected to form during normal storage. |

## 11. TOXICOLOGICAL INFORMATION

| | | |
|---|---|---|
| **Basis for Assessment** | : | Information given is based on data on the components and the toxicology of similar products. |
| **Acute Oral Toxicity** | : | Expected to be of low toxicity: LD50 > 5000 mg/kg , Rat |
| **Acute Dermal Toxicity** | : | Expected to be of low toxicity: LD50 > 5000 mg/kg , Rabbit |
| **Acute Inhalation Toxicity** | : | Not considered to be an inhalation hazard under normal conditions of use. |
| **Skin Irritation** | : | Expected to be slightly irritating. Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis. |
| **Eye Irritation** | : | Expected to be slightly irritating. |
| **Respiratory Irritation** | : | Inhalation of vapours or mists may cause irritation. |
| **Sensitisation** | : | Not expected to be a skin sensitiser. |
| **Repeated Dose Toxicity** | : | Not expected to be a hazard. |
| **Mutagenicity** | : | Not considered a mutagenic hazard. |
| **Carcinogenicity** | : | 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). Other components are not known to be associated with carcinogenic effects. |
| **Reproductive and Developmental Toxicity** | : | Not expected to be a hazard. |

| | | |
|---|---|---|
| **Additional Information** | : | 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. Continuous contact with used engine oils has caused skin cancer in animal tests. |

## 12. ECOLOGICAL INFORMATION

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.

| | | |
|---|---|---|
| **Acute Toxicity** | : | Poorly soluble mixture. May cause physical fouling of aquatic organisms. Expected to be practically non toxic: LL/EL/IL50 > 100 mg/l (to aquatic organisms) (LL/EL50 expressed as the nominal amount of product required to prepare aqueous test extract). Mineral oil is not expected to cause any chronic effects to aquatic organisms at concentrations less than 1 mg/l. |
| **Mobility** | : | Liquid under most environmental conditions. Floats on water. If it enters soil, it will adsorb to soil particles and will not be mobile. |
| **Persistence/degradability** | : | Expected to be not readily biodegradable. Major constituents are expected to be inherently biodegradable, but the product contains components that may persist in the environment. |
| **Bioaccumulation** | : | Contains components with the potential to bioaccumulate. |
| **Other Adverse Effects** | : | Product is a mixture of non-volatile components, which are not expected to be released to air in any significant quantities. Not expected to have ozone depletion potential, photochemical ozone creation potential or global warming potential. |

## 13. DISPOSAL CONSIDERATIONS

| | | |
|---|---|---|
| **Material Disposal** | : | 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. |
| **Container Disposal** | : | Dispose in accordance with prevailing regulations, preferably to a recognised collector or contractor. The competence of the collector or contractor should be established beforehand. |
| **Local Legislation** | : | Disposal should be in accordance with applicable regional, national, and local laws and regulations. |

## 14. TRANSPORT INFORMATION

**US Department of Transportation Classification (49CFR)**
This material is not subject to DOT regulations under 49 CFR Parts 171-180.

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

**IATA (Country variations may apply)**
This material is not classified as dangerous under IATA regulations.

## 15. REGULATORY INFORMATION

The regulatory information is not intended to be comprehensive. Other regulations may apply to this material.

### Federal Regulatory Status

**Notification Status**

| | |
|---|---|
| DSL | All components listed. |
| EINECS | All components listed. |
| TSCA | All components listed. |

**SARA Hazard Categories (311/312)**
No SARA 311/312 Hazards.

### State Regulatory Status

**California Safe Drinking Water and Toxic Enforcement Act (Proposition 65)**

This material does not contain any chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

**New Jersey Right-To-Know Chemical List**

| | |
|---|---|
| Distillates (petroleum), hydrotreated light paraffinic (64742-55-8) | Listed. |

**Pennsylvannia Right-To-Know Chemical List**

| | |
|---|---|
| Distillates (petroleum), hydrotreated light paraffinic (64742-55-8) | Listed. |

## 16. OTHER INFORMATION

| | | |
|---|---|---|
| **NFPA Rating (Health, Fire, Reactivity)** | : | 0, 1, 0 |
| **MSDS Version Number** | : | 8.0 |

## Material Safety Data Sheet

| | | |
|---|---|---|
| **MSDS Effective Date** | : | 07/07/2008 |
| **MSDS Revisions** | : | A vertical bar (\|) in the left margin indicates an amendment from the previous version. |
| **MSDS Regulation** | : | The content and format of this MSDS is in accordance with the OSHA Hazard Communication Standard, 29 CFR 1910.1200. |
| **MSDS Distribution** | : | The information in this document should be made available to all who may handle the product. |
| **Disclaimer** | : | The information contained herein is based on our current knowledge of the underlying data and is intended to describe the product for the purpose of health, safety and environmental requirements only. No warranty or guarantee is expressed or implied regarding the accuracy of these data or the results to be obtained from the use of the product. |

# Material Safety Data Sheet

## 1. MATERIAL AND COMPANY IDENTIFICATION

**Material Name** : **Rotella T Engine Oil SAE 15W-40 (CJ-4)**

**Manufacturer/Supplier** : **SOPUS Products**
PO Box 4427
Houston, TX 77210-4427
USA

**MSDS Request** : 877-276-7285

**Emergency Telephone Number**
**Spill Information** : 877-242-7400
**Health Information** : 877-504-9351

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

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

## 3. HAZARDS IDENTIFICATION

**Emergency Overview**

**Appearance and Odour** : Amber. Liquid at room temperature. Slight hydrocarbon.

**Health Hazards** : Not classified as dangerous for supply or conveyance.
**Safety Hazards** : Not classified as flammable but will burn.
**Environmental Hazards** : Not classified as dangerous for the environment.

**Health Hazards** : Not expected to be a health hazard when used under normal conditions.

**Health Hazards**
**Inhalation** : Under normal conditions of use, this is not expected to be a primary route of exposure.
**Skin Contact** : Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.
**Eye Contact** : May cause slight irritation to eyes.
**Ingestion** : Low toxicity if swallowed.
**Other Information** : Used oil may contain harmful impurities.
**Signs and Symptoms** : 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.
**Aggravated Medical Condition** : Pre-existing medical conditions of the following organ(s) or organ system(s) may be aggravated by exposure to this material: Skin.
**Environmental Hazards** : Not classified as dangerous for the environment.
**Additional Information** : 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.

## 4. FIRST AID MEASURES

| | | |
|---|---|---|
| **General Information** | : | Not expected to be a health hazard when used under normal conditions. |
| **Inhalation** | : | No treatment necessary under normal conditions of use. If symptoms persist, obtain medical advice. |
| **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. |
| **Eye Contact** | : | Flush eye with copious quantities of water. If persistent irritation occurs, obtain medical attention. |
| **Ingestion** | : | In general no treatment is necessary unless large quantities are swallowed, however, get medical advice. |
| **Advice to Physician** | : | Treat symptomatically. |

## 5. FIRE FIGHTING MEASURES

Clear fire area of all non-emergency personnel.

| | | |
|---|---|---|
| **Flash point** | : | Typical 400 °C / 752 °F (COC) |
| **Upper / lower Flammability or Explosion limits** | : | Typical 1 - 10 %(V)(based on mineral oil) |
| **Auto ignition temperature** | : | > 320 °C / 608 °F |
| **Specific Hazards** | : | Hazardous combustion products may include: A complex mixture of airborne solid and liquid particulates and gases (smoke). Carbon monoxide. Unidentified organic and inorganic compounds. |
| **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. |
| **Protective Equipment for Firefighters** | : | Proper protective equipment including breathing apparatus must be worn when approaching a fire in a confined space. |

## 6. ACCIDENTAL RELEASE MEASURES

Avoid contact with spilled or released material. For guidance on selection of personal protective equipment see Chapter 8 of this Material Safety Data Sheet. See Chapter 13 for information on disposal. Observe all relevant local and international regulations.

| | | |
|---|---|---|
| **Protective measures** | : | Avoid contact with skin and eyes. Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers. |
| **Clean Up Methods** | : | 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** : Local authorities should be advised if significant spillages cannot be contained.

## 7. HANDLING AND STORAGE

**General Precautions** : Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols. Properly dispose of any contaminated rags or cleaning materials in order to prevent fires. 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.

**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.

**Storage** : Keep container tightly closed and in a cool, well-ventilated place. Use properly labelled and closeable containers. Storage Temperature: 0 - 50 °C / 32 - 122 °F

**Recommended Materials** : For containers or container linings, use mild steel or high density polyethylene.

**Unsuitable Materials** : PVC.

**Additional Information** : Polyethylene containers should not be exposed to high temperatures because of possible risk of distortion.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Occupational Exposure Limits**

| Material | Source | Type | ppm | mg/m3 | Notation |
|---|---|---|---|---|---|
| Oil mist, mineral | ACGIH | TWA(Mist.) | | 5 mg/m3 | |
| Oil mist, mineral | ACGIH | STEL(Mist.) | | 10 mg/m3 | |

**Exposure Controls** : 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.

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

**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 combined particulate/organic gases and vapours [boiling point >65 °C (149 °F)]. |
| **Hand Protection** | : | 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, glove thickness, 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. |
| **Eye Protection** | : | Wear safety glasses or full face shield if splashes are likely to occur. |
| **Protective Clothing** | : | Skin protection not ordinarily required beyond standard issue work clothes. |
| **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. |
| **Environmental Exposure Controls** | : | Minimise release to the environment. An environmental assessment must be made to ensure compliance with local environmental legislation. |

## 9. PHYSICAL AND CHEMICAL PROPERTIES

| | | |
|---|---|---|
| Appearance | : | Amber. Liquid at room temperature. |
| Odour | : | Slight hydrocarbon. |
| pH | : | Data not available |
| Initial Boiling Point and Boiling Range | : | > 280 °C / 536 °F estimated value(s) |
| Pour point | : | Typical -20 °C / -4 °F |
| Flash point | : | Typical 400 °C / 752 °F (COC) |
| Upper / lower Flammability or Explosion limits | : | Typical 1 - 10 %(V) (based on mineral oil) |
| Auto-ignition temperature | : | > 320 °C / 608 °F |
| Vapour pressure | : | < 0.5 Pa at 20 °C / 68 °F (estimated value(s)) |
| Specific gravity | : | Typical 0.85 |
| Density | : | Typical 7.43 g/cm3 |
| Water solubility | : | Negligible. |
| n-octanol/water partition coefficient (log Pow) | : | > 6 (based on information on similar products) |
| Kinematic viscosity | : | Typical 118 mm2/s at 40 °C / 104 °F |
| Vapour density (air=1) | : | > 1 (estimated value(s)) |

Evaporation rate (nBuAc=1) : Data not available

## 10. STABILITY AND REACTIVITY

**Stability** : Stable.
**Conditions to Avoid** : Extremes of temperature and direct sunlight.
**Materials to Avoid** : Strong oxidising agents.
**Hazardous Decomposition Products** : Hazardous decomposition products are not expected to form during normal storage.

## 11. TOXICOLOGICAL INFORMATION

**Basis for Assessment** : Information given is based on data on the components and the toxicology of similar products.
**Acute Oral Toxicity** : Expected to be of low toxicity: LD50 > 5000 mg/kg , Rat
**Acute Dermal Toxicity** : Expected to be of low toxicity: LD50 > 5000 mg/kg , Rabbit
**Acute Inhalation Toxicity** : Not considered to be an inhalation hazard under normal conditions of use.
**Skin Irritation** : Expected to be slightly irritating. Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.
**Eye Irritation** : Expected to be slightly irritating.
**Respiratory Irritation** : Inhalation of vapours or mists may cause irritation.
**Sensitisation** : Not expected to be a skin sensitiser.
**Repeated Dose Toxicity** : Not expected to be a hazard.
**Mutagenicity** : Not considered a mutagenic hazard.
**Carcinogenicity** : 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). Other components are not known to be associated with carcinogenic effects.

**Reproductive and Developmental Toxicity** : Not expected to be a hazard.
**Additional Information** : 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. Continuous contact with used engine oils has caused skin cancer in animal tests.

## 12. ECOLOGICAL INFORMATION

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.

**Acute Toxicity** : Poorly soluble mixture. May cause physical fouling of aquatic organisms. Expected to be practically non toxic: LL/EL/IL50 > 100 mg/l (to aquatic organisms) (LL/EL50 expressed as the nominal amount of product required to prepare aqueous test

extract). Mineral oil is not expected to cause any chronic effects to aquatic organisms at concentrations less than 1 mg/l.

| | | |
|---|---|---|
| **Mobility** | : | Liquid under most environmental conditions. Floats on water. If it enters soil, it will adsorb to soil particles and will not be mobile. |
| **Persistence/degradability** | : | Expected to be not readily biodegradable. Major constituents are expected to be inherently biodegradable, but the product contains components that may persist in the environment. |
| **Bioaccumulation** | : | Contains components with the potential to bioaccumulate. |
| **Other Adverse Effects** | : | Product is a mixture of non-volatile components, which are not expected to be released to air in any significant quantities. Not expected to have ozone depletion potential, photochemical ozone creation potential or global warming potential. |

## 13. DISPOSAL CONSIDERATIONS

| | | |
|---|---|---|
| **Material Disposal** | : | 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. |
| **Container Disposal** | : | Dispose in accordance with prevailing regulations, preferably to a recognised collector or contractor. The competence of the collector or contractor should be established beforehand. |
| **Local Legislation** | : | Disposal should be in accordance with applicable regional, national, and local laws and regulations. |

## 14. TRANSPORT INFORMATION

**US Department of Transportation Classification (49CFR)**
This material is not subject to DOT regulations under 49 CFR Parts 171-180.

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

**IATA (Country variations may apply)**
This material is not classified as dangerous under IATA regulations.

## 15. REGULATORY INFORMATION

The regulatory information is not intended to be comprehensive. Other regulations may apply to this material.

**Federal Regulatory Status**

**Notification Status**

| | |
|---|---|
| DSL | All components listed. |

| | |
|---|---|
| EINECS | All components listed. |
| TSCA | All components listed. |

**SARA Hazard Categories (311/312)**
No SARA 311/312 Hazards.

**State Regulatory Status**

**California Safe Drinking Water and Toxic Enforcement Act (Proposition 65)**

This material does not contain any chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

## 16. OTHER INFORMATION

| | | |
|---|---|---|
| **NFPA Rating (Health, Fire, Reactivity)** | : | 0, 1, 0 |
| **MSDS Version Number** | : | 17.0 |
| **MSDS Effective Date** | : | 07/07/2008 |
| **MSDS Revisions** | : | A vertical bar (\|) in the left margin indicates an amendment from the previous version. |
| **MSDS Regulation** | : | The content and format of this MSDS is in accordance with the OSHA Hazard Communication Standard, 29 CFR 1910.1200. |
| **MSDS Distribution** | : | The information in this document should be made available to all who may handle the product. |
| **Disclaimer** | : | The information contained herein is based on our current knowledge of the underlying data and is intended to describe the product for the purpose of health, safety and environmental requirements only. No warranty or guarantee is expressed or implied regarding the accuracy of these data or the results to be obtained from the use of the product. |

# Material Safety Data Sheet

## SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

### Delo® 400 LE SAE 15W-40

**Product Use:** Engine Oil
**Product Number(s):** CPS222220
**Company Identification**
Chevron Products Company
a division of Chevron U.S.A. Inc.
6001 Bollinger Canyon Road
San Ramon, CA 94583
United States of America
www.chevronlubricants.com

**Transportation Emergency Response**
CHEMTREC: (800) 424-9300 or (703) 527-3887
**Health Emergency**
Chevron Emergency Information Center: Located in the USA. International collect calls accepted. (800) 231-0623 or (510) 231-0623
**Product Information**
email : lubemsds@chevron.com
Product Information: (800) LUBE TEK
MSDS Requests: (800) 414-6737

## SECTION 2 COMPOSITION/ INFORMATION ON INGREDIENTS

| COMPONENTS | CAS NUMBER | AMOUNT |
|---|---|---|
| Highly refined mineral oil (C15 - C50) | Mixture | 80 - 100 %weight |
| Zinc alkyl dithiophosphate | 68649-42-3 | 1 - 2 %weight |

## SECTION 3 HAZARDS IDENTIFICATION

**IMMEDIATE HEALTH EFFECTS**
**Eye:** Not expected to cause prolonged or significant eye irritation.
**Skin:** Contact with the skin is not expected to cause prolonged or significant irritation. Contact with the skin is not expected to cause an allergic skin response. Not expected to be harmful to internal organs if absorbed through the skin.
**Ingestion:** Not expected to be harmful if swallowed.
**Inhalation:** Not expected to be harmful if inhaled. Contains a petroleum-based mineral oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended mineral oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficulty breathing.

## SECTION 4 FIRST AID MEASURES

**Eye:** No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.
**Skin:** No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean

before reuse.
**Ingestion:** No specific first aid measures are required. Do not induce vomiting. As a precaution, get medical advice.
**Inhalation:** No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs.

## SECTION 5 FIRE FIGHTING MEASURES

**FIRE CLASSIFICATION:**
OSHA Classification (29 CFR 1910.1200): Not classified by OSHA as flammable or combustible.

**NFPA RATINGS:** Health: 0 Flammability: 1 Reactivity: 0

**FLAMMABLE PROPERTIES:**
**Flashpoint:** (Cleveland Open Cup) 200 °C (392 °F) (Min)
**Autoignition:** No Data Available
**Flammability (Explosive) Limits (% by volume in air):** Lower: Not Applicable Upper: Not Applicable

**EXTINGUISHING MEDIA:** Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.
**PROTECTION OF FIRE FIGHTERS:**
**Fire Fighting Instructions:** This material will burn although it is not easily ignited. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.
**Combustion Products:** Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion.

## SECTION 6 ACCIDENTAL RELEASE MEASURES

**Protective Measures:** Eliminate all sources of ignition in vicinity of spilled material.
**Spill Management:** Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.
**Reporting:** Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required.

## SECTION 7 HANDLING AND STORAGE

**Precautionary Measures:** Keep out of the reach of children.
**General Handling Information:** Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.
**Static Hazard:** Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures. For more information, refer to OSHA Standard 29 CFR 1910.106, 'Flammable and Combustible Liquids', National Fire Protection Association (NFPA 77, 'Recommended Practice on Static Electricity', and/or the American Petroleum Institute (API) Recommended Practice 2003, 'Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents'.
**Container Warnings:** Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

## SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

**GENERAL CONSIDERATIONS:**

Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

**ENGINEERING CONTROLS:**
Use in a well-ventilated area.

**PERSONAL PROTECTIVE EQUIPMENT**
**Eye/Face Protection:** No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.
**Skin Protection:** No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: 4H (PE/EVAL), Nitrile Rubber, Silver Shield, Viton.
**Respiratory Protection:** No respiratory protection is normally required.
If user operations generate an oil mist, determine if airborne concentrations are below the occupational exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection from the measured concentrations of this material. For air-purifying respirators use a particulate cartridge.
Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

**Color:** Brown
**Physical State:** Liquid
**Odor:** Petroleum odor
**pH:** Not Applicable
**Vapor Pressure:** <0.01 mmHg @ 37.8 °C (100 °F)
**Vapor Density (Air = 1):** >1
**Boiling Point:** >315°C (599°F)
**Solubility:** Soluble in hydrocarbons; insoluble in water
**Freezing Point:** Not Applicable
**Melting Point:** Not Applicable
**Specific Gravity:** 0.87 - 0.9 @ 15.6°C (60.1°F) / 15.6°C (60.1°F)
**Volatile Organic Compounds (VOC) :** 1.1 %weight
**Viscosity:** 6.6 cSt @ 100°C (212°F) (Min)
**Evaporation Rate:** No Data Available

## SECTION 10 STABILITY AND REACTIVITY

**Chemical Stability:** This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.
**Incompatibility With Other Materials:** May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.
**Hazardous Decomposition Products:** None known (None expected)
**Hazardous Polymerization:** Hazardous polymerization will not occur.

## SECTION 11 TOXICOLOGICAL INFORMATION

**IMMEDIATE HEALTH EFFECTS**
**Eye Irritation:** The eye irritation hazard is based on evaluation of data for similar materials or product components.
**Skin Irritation:** The skin irritation hazard is based on evaluation of data for similar materials or product components.
**Skin Sensitization:** The skin sensitization hazard is based on evaluation of data for similar materials or product

components.No product toxicology data available.
**Acute Dermal Toxicity:** The acute dermal toxicity hazard is based on evaluation of data for similar materials or product components.
**Acute Oral Toxicity:** The acute oral toxicity hazard is based on evaluation of data for similar materials or product components.
**Acute Inhalation Toxicity:** The acute inhalation toxicity hazard is based on evaluation of data for similar materials or product components.

**ADDITIONAL TOXICOLOGY INFORMATION:**
This product contains petroleum base oils which may be refined by various processes including severe solvent extraction, severe hydrocracking, or severe hydrotreating. None of the oils requires a cancer warning under the OSHA Hazard Communication Standard (29 CFR 1910.1200). These oils have not been listed in the National Toxicology Program (NTP) Annual Report nor have they been classified by the International Agency for Research on Cancer (IARC) as; carcinogenic to humans (Group 1), probably carcinogenic to humans (Group 2A), or possibly carcinogenic to humans (Group 2B). These oils have not been classified by the American Conference of Governmental Industrial Hygienists (ACGIH) as: confirmed human carcinogen (A1), suspected human carcinogen (A2), or confirmed animal carcinogen with unknown relevance to humans (A3). During use in engines, contamination of oil with low levels of cancer-causing combustion products occurs. Used motor oils have been shown to cause skin cancer in mice following repeated application and continuous exposure. Brief or intermittent skin contact with used motor oil is not expected to have serious effects in humans if the oil is thoroughly removed by washing with soap and water.

## SECTION 12 ECOLOGICAL INFORMATION

**ECOTOXICITY**
The toxicity of this material to aquatic organisms has not been evaluated. Consequently, this material should be kept out of sewage and drainage systems and all bodies of water. The ecotoxicity hazard is based on an evaluation of data for the components or a similar material.

**ENVIRONMENTAL FATE**
**Ready Biodegradability:** 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.

## SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. Oil collection services are available for used oil recycling or disposal. Place contaminated materials in containers and dispose of in a manner consistent with applicable regulations. Contact your sales representative or local environmental or health authorities for approved disposal or recycling methods.

## SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.
**DOT Shipping Description:** PETROLEUM LUBRICATING OIL, NOT REGULATED AS A HAZARDOUS MATERIAL FOR TRANSPORTATION UNDER 49 CFR
**Additional Information:**NOT HAZARDOUS BY U.S. DOT. ADR/RID HAZARD CLASS NOT APPLICABLE.

**IMO/IMDG Shipping Description:** PETROLEUM LUBRICATING OIL; NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER THE IMDG CODE

**ICAO/IATA Shipping Description:** PETROLEUM LUBRICATING OIL; NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER ICAO

## SECTION 15 REGULATORY INFORMATION

**EPCRA 311/312 CATEGORIES:** 1. Immediate (Acute) Health Effects: NO
2. Delayed (Chronic) Health Effects: NO
3. Fire Hazard: NO
4. Sudden Release of Pressure Hazard: NO
5. Reactivity Hazard: NO

REGULATORY LISTS SEARCHED:

| | |
|---|---|
| 01-1=IARC Group 1 | 03=EPCRA 313 |
| 01-2A=IARC Group 2A | 04=CA Proposition 65 |
| 01-2B=IARC Group 2B | 05=MA RTK |
| 02=NTP Carcinogen | 06=NJ RTK |
| | 07=PA RTK |

The following components of this material are found on the regulatory lists indicated.

| | |
|---|---|
| Zinc alkyl dithiophosphate | 03, 06 |

**CHEMICAL INVENTORIES:**
All components comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), ENCS (Japan), IECSC (China), KECI (Korea), PICCS (Philippines), TSCA (United States).

One or more components is listed on ELINCS (European Union). Secondary notification by the importer may be required. All other components are listed or exempted from listing on EINECS.

**NEW JERSEY RTK CLASSIFICATION:**
Under the New Jersey Right-to-Know Act L. 1983 Chapter 315 N.J.S.A. 34:5A-1 et. seq., the product is to be identified as follows: PETROLEUM OIL (Motor oil)

**WHMIS CLASSIFICATION:**
This product is not considered a controlled product according to the criteria of the Canadian Controlled Products Regulations.

## SECTION 16 OTHER INFORMATION

**NFPA RATINGS:** Health: 0 Flammability: 1 Reactivity: 0

**HMIS RATINGS:** Health: 1 Flammability: 1 Reactivity: 0
(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

**LABEL RECOMMENDATION:**
Label Category : ENGINE OIL 1 - ENG1

**REVISION STATEMENT:** This is a new Material Safety Data Sheet.
**Revision Date:** July 24, 2006

**ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:**

| | |
|---|---|
| TLV - Threshold Limit Value | TWA - Time Weighted Average |
| STEL - Short-term Exposure Limit | PEL - Permissible Exposure Limit |
| | CAS - Chemical Abstract Service Number |
| ACGIH - American Conference of Government Industrial Hygienists | IMO/IMDG - International Maritime Dangerous Goods Code |
| API - American Petroleum Institute | MSDS - Material Safety Data Sheet |
| CVX - Chevron | NFPA - National Fire Protection Association (USA) |

| | |
|---|---|
| DOT - Department of Transportation (USA) | NTP - National Toxicology Program (USA) |
| IARC - International Agency for Research on Cancer | OSHA - Occupational Safety and Health Administration |

Prepared according to the OSHA Hazard Communication Standard (29 CFR 1910.1200) and the ANSI MSDS Standard (Z400.1) by the Chevron Energy Technology Company, 100 Chevron Way, Richmond, California 94802.

**The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.**

# Material Safety Data Sheet

## 1. MATERIAL AND COMPANY IDENTIFICATION

**Material Name** : **FormulaShell Motor Oil SAE 5W-20**

**Manufacturer/Supplier** : **SOPUS Products**
PO Box 4427
Houston, TX 77210-4427
USA

**MSDS Request** : 877-276-7285

**Emergency Telephone Number**
**Spill Information** : 877-242-7400
**Health Information** : 877-504-9351

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

| Chemical Identity | CAS No. | Concentration |
|---|---|---|
| Zinc compounds, NOS | 25103-54-2 | 1.00 - 5.00 % |

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

## 3. HAZARDS IDENTIFICATION

**Emergency Overview**

**Appearance and Odour** : Amber. Liquid at room temperature. Slight hydrocarbon.

**Health Hazards** : Not classified as dangerous for supply or conveyance.
**Safety Hazards** : Not classified as flammable but will burn.
**Environmental Hazards** : Not classified as dangerous for the environment.

**Health Hazards** : Not expected to be a health hazard when used under normal conditions.

**Health Hazards**
**Inhalation** : Under normal conditions of use, this is not expected to be a primary route of exposure.
**Skin Contact** : Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.
**Eye Contact** : May cause slight irritation to eyes.
**Ingestion** : Low toxicity if swallowed.
**Other Information** : Used oil may contain harmful impurities.
**Signs and Symptoms** : 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.
**Aggravated Medical Condition** : Pre-existing medical conditions of the following organ(s) or organ system(s) may be aggravated by exposure to this material: Skin.
**Environmental Hazards** : Not classified as dangerous for the environment.

| | | |
|---|---|---|
| **Additional Information** | : | 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. |

## 4. FIRST AID MEASURES

| | | |
|---|---|---|
| **General Information** | : | Not expected to be a health hazard when used under normal conditions. |
| **Inhalation** | : | No treatment necessary under normal conditions of use. If symptoms persist, obtain medical advice. |
| **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. |
| **Eye Contact** | : | Flush eye with copious quantities of water. If persistent irritation occurs, obtain medical attention. |
| **Ingestion** | : | In general no treatment is necessary unless large quantities are swallowed, however, get medical advice. |
| **Advice to Physician** | : | Treat symptomatically. |

## 5. FIRE FIGHTING MEASURES

Clear fire area of all non-emergency personnel.

| | | |
|---|---|---|
| **Flash point** | : | Typical 400 °C / 752 °F (COC) |
| **Upper / lower Flammability or Explosion limits** | : | Typical 1 - 10 %(V)(based on mineral oil) |
| **Auto ignition temperature** | : | > 320 °C / 608 °F |
| **Specific Hazards** | : | Hazardous combustion products may include: A complex mixture of airborne solid and liquid particulates and gases (smoke). Carbon monoxide. Unidentified organic and inorganic compounds. |
| **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. |
| **Protective Equipment for Firefighters** | : | Proper protective equipment including breathing apparatus must be worn when approaching a fire in a confined space. |

## 6. ACCIDENTAL RELEASE MEASURES

Avoid contact with spilled or released material. For guidance on selection of personal protective equipment see Chapter 8 of this Material Safety Data Sheet. See Chapter 13 for information on disposal. Observe all relevant local and international regulations.

| | | |
|---|---|---|
| **Protective measures** | : | Avoid contact with skin and eyes. Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers. |
| **Clean Up Methods** | : | 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** : Local authorities should be advised if significant spillages cannot be contained.

## 7. HANDLING AND STORAGE

**General Precautions** : Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols. Properly dispose of any contaminated rags or cleaning materials in order to prevent fires. 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.

**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.

**Storage** : Keep container tightly closed and in a cool, well-ventilated place. Use properly labelled and closeable containers. Storage Temperature: 0 - 50 °C / 32 - 122 °F

**Recommended Materials** : For containers or container linings, use mild steel or high density polyethylene.

**Unsuitable Materials** : PVC.

**Additional Information** : Polyethylene containers should not be exposed to high temperatures because of possible risk of distortion.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Occupational Exposure Limits**

| Material | Source | Type | ppm | mg/m3 | Notation |
|---|---|---|---|---|---|
| Oil mist, mineral | ACGIH | TWA(Mist.) | | 5 mg/m3 | |
| Oil mist, mineral | ACGIH | STEL(Mist.) | | 10 mg/m3 | |

**Exposure Controls** : 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.

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

**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 combined particulate/organic gases and vapours [boiling point >65 °C (149 °F)]. |
| **Hand Protection** | : | 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, glove thickness, 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. |
| **Eye Protection** | : | Wear safety glasses or full face shield if splashes are likely to occur. |
| **Protective Clothing** | : | Skin protection not ordinarily required beyond standard issue work clothes. |
| **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. |
| **Environmental Exposure Controls** | : | Minimise release to the environment. An environmental assessment must be made to ensure compliance with local environmental legislation. |

## 9. PHYSICAL AND CHEMICAL PROPERTIES

| | | |
|---|---|---|
| Appearance | : | Amber. Liquid at room temperature. |
| Odour | : | Slight hydrocarbon. |
| pH | : | Data not available |
| Initial Boiling Point and Boiling Range | : | > 280 °C / 536 °F estimated value(s) |
| Pour point | : | Typical -20 °C / -4 °F |
| Flash point | : | Typical 400 °C / 752 °F (COC) |
| Upper / lower Flammability or Explosion limits | : | Typical 1 - 10 %(V) (based on mineral oil) |
| Auto-ignition temperature | : | > 320 °C / 608 °F |
| Vapour pressure | : | < 0.5 Pa at 20 °C / 68 °F (estimated value(s)) |
| Specific gravity | : | Typical 0.85 |
| Density | : | Typical 7.43 g/cm3 |
| Water solubility | : | Negligible. |
| n-octanol/water partition coefficient (log Pow) | : | > 6 (based on information on similar products) |

| | | |
|---|---|---|
| Kinematic viscosity | : | Typical 50 mm2/s at 40 °C / 104 °F |
| Vapour density (air=1) | : | > 1 (estimated value(s)) |
| Evaporation rate (nBuAc=1) | : | Data not available |

## 10. STABILITY AND REACTIVITY

| | | |
|---|---|---|
| **Stability** | : | Stable. |
| **Conditions to Avoid** | : | Extremes of temperature and direct sunlight. |
| **Materials to Avoid** | : | Strong oxidising agents. |
| **Hazardous Decomposition Products** | : | Hazardous decomposition products are not expected to form during normal storage. |

## 11. TOXICOLOGICAL INFORMATION

| | | |
|---|---|---|
| **Basis for Assessment** | : | Information given is based on data on the components and the toxicology of similar products. |
| **Acute Oral Toxicity** | : | Expected to be of low toxicity: LD50 > 5000 mg/kg , Rat |
| **Acute Dermal Toxicity** | : | Expected to be of low toxicity: LD50 > 5000 mg/kg , Rabbit |
| **Acute Inhalation Toxicity** | : | Not considered to be an inhalation hazard under normal conditions of use. |
| **Skin Irritation** | : | Expected to be slightly irritating. Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis. |
| **Eye Irritation** | : | Expected to be slightly irritating. |
| **Respiratory Irritation** | : | Inhalation of vapours or mists may cause irritation. |
| **Sensitisation** | : | Not expected to be a skin sensitiser. |
| **Repeated Dose Toxicity** | : | Not expected to be a hazard. |
| **Mutagenicity** | : | Not considered a mutagenic hazard. |
| **Carcinogenicity** | : | 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). Other components are not known to be associated with carcinogenic effects. |
| **Reproductive and Developmental Toxicity** | : | Not expected to be a hazard. |
| **Additional Information** | : | 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. Continuous contact with used engine oils has caused skin cancer in animal tests. |

## 12. ECOLOGICAL INFORMATION

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.

| | | |
|---|---|---|
| **Acute Toxicity** | : | Poorly soluble mixture. May cause physical fouling of aquatic organisms. Expected to be practically non toxic: LL/EL/IL50 > |

100 mg/l (to aquatic organisms) (LL/EL50 expressed as the nominal amount of product required to prepare aqueous test extract). Mineral oil is not expected to cause any chronic effects to aquatic organisms at concentrations less than 1 mg/l.

| | | |
|---|---|---|
| **Mobility** | : | Liquid under most environmental conditions. Floats on water. If it enters soil, it will adsorb to soil particles and will not be mobile. |
| **Persistence/degradability** | : | Expected to be not readily biodegradable. Major constituents are expected to be inherently biodegradable, but the product contains components that may persist in the environment. |
| **Bioaccumulation** | : | Contains components with the potential to bioaccumulate. |
| **Other Adverse Effects** | : | Product is a mixture of non-volatile components, which are not expected to be released to air in any significant quantities. Not expected to have ozone depletion potential, photochemical ozone creation potential or global warming potential. |

## 13. DISPOSAL CONSIDERATIONS

| | | |
|---|---|---|
| **Material Disposal** | : | 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. |
| **Container Disposal** | : | Dispose in accordance with prevailing regulations, preferably to a recognised collector or contractor. The competence of the collector or contractor should be established beforehand. |
| **Local Legislation** | : | Disposal should be in accordance with applicable regional, national, and local laws and regulations. |

## 14. TRANSPORT INFORMATION

**US Department of Transportation Classification (49CFR)**
This material is not subject to DOT regulations under 49 CFR Parts 171-180.

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

**IATA (Country variations may apply)**
This material is not classified as dangerous under IATA regulations.

## 15. REGULATORY INFORMATION

The regulatory information is not intended to be comprehensive. Other regulations may apply to this material.

**Federal Regulatory Status**

**Notification Status**

| | |
|---|---|
| DSL | All components listed. |
| EINECS | All components listed. |
| TSCA | All components listed. |

**Comprehensive Environmental Release, Compensation & Liability Act (CERCLA)**

FormulaShell Motor Oil SAE 5W-20 Reportable quantity: 89 lbs
()

Zinc compounds, NOS (25103-54-2)

**SARA Hazard Categories (311/312)**
No SARA 311/312 Hazards.

**SARA Toxic Release Inventory (TRI) (313)**

Zinc compounds, NOS (25103-54-2) 1.1185%

**State Regulatory Status**

**California Safe Drinking Water and Toxic Enforcement Act (Proposition 65)**

This material does not contain any chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

**New Jersey Right-To-Know Chemical List**

Zinc compounds, NOS (25103-54-2) Listed.

## 16. OTHER INFORMATION

| | | |
|---|---|---|
| **NFPA Rating (Health, Fire, Reactivity)** | : | 0, 1, 0 |
| **MSDS Version Number** | : | 3.0 |
| **MSDS Effective Date** | : | 07/07/2008 |
| **MSDS Revisions** | : | A vertical bar (\|) in the left margin indicates an amendment from the previous version. |
| **MSDS Regulation** | : | The content and format of this MSDS is in accordance with the OSHA Hazard Communication Standard, 29 CFR 1910.1200. |
| **MSDS Distribution** | : | The information in this document should be made available to all who may handle the product. |

## Material Safety Data Sheet

**Disclaimer** : The information contained herein is based on our current knowledge of the underlying data and is intended to describe the product for the purpose of health, safety and environmental requirements only. No warranty or guarantee is expressed or implied regarding the accuracy of these data or the results to be obtained from the use of the product.

# Material Safety Data Sheet

## SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

### Chevron Automatic Transmission Fluid MD-3

**Product Use:** Transmission Fluid
**Product Number(s):** CPS226502
**Synonyms:** Automatic Transmission Fluid, Chevron ATF DEXRON® III/MERCON®, DEXRON® - III, MERCON®
**Company Identification**
Chevron Products Company
a division of Chevron U.S.A. Inc.
6001 Bollinger Canyon Road
San Ramon, CA 94583
United States of America
www.chevronlubricants.com

**Transportation Emergency Response**
CHEMTREC: (800) 424-9300 or (703) 527-3887
**Health Emergency**
Chevron Emergency Information Center: Located in the USA. International collect calls accepted. (800) 231-0623 or (510) 231-0623
**Product Information**
email : lubemsds@chevron.com
Product Information: (800) LUBE TEK
MSDS Requests: (800) 414-6737

## SECTION 2 COMPOSITION/ INFORMATION ON INGREDIENTS

| COMPONENTS | CAS NUMBER | AMOUNT |
|---|---|---|
| Highly refined mineral oil (C15 - C50) | Mixture | 80 - 100 %weight |

## SECTION 3 HAZARDS IDENTIFICATION

**IMMEDIATE HEALTH EFFECTS**
**Eye:** Not expected to cause prolonged or significant eye irritation.
**Skin:** Contact with the skin is not expected to cause prolonged or significant irritation. Not expected to be harmful to internal organs if absorbed through the skin. High-Pressure Equipment Information: Accidental high-velocity injection under the skin of materials of this type may result in serious injury. Seek medical attention at once should an accident like this occur. The initial wound at the injection site may not appear to be serious at first; but, if left untreated, could result in disfigurement or amputation of the affected part.

**Ingestion:** Not expected to be harmful if swallowed.
**Inhalation:** Not expected to be harmful if inhaled. Contains a petroleum-based mineral oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended mineral oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficulty breathing.

## SECTION 4 FIRST AID MEASURES

**Eye:** No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes

with water.
**Skin:** No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.
**Ingestion:** No specific first aid measures are required. Do not induce vomiting. As a precaution, get medical advice.
**Inhalation:** No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs.
**Note to Physicians:** In an accident involving high-pressure equipment, this product may be injected under the skin. Such an accident may result in a small, sometimes bloodless, puncture wound. However, because of its driving force, material injected into a fingertip can be deposited into the palm of the hand. Within 24 hours, there is usually a great deal of swelling, discoloration, and intense throbbing pain. Immediate treatment at a surgical emergency center is recommended.

## SECTION 5 FIRE FIGHTING MEASURES

Leaks/ruptures in high pressure system using materials of this type can create a fire hazard when in the vicinity of ignition sources (eg. open flame, pilot lights, sparks, or electric arcs).

**FIRE CLASSIFICATION:**
OSHA Classification (29 CFR 1910.1200): Not classified by OSHA as flammable or combustible.

**NFPA RATINGS:** Health: 0 Flammability: 1 Reactivity: 0

**FLAMMABLE PROPERTIES:**
**Flashpoint:** (Cleveland Open Cup) 178 °C (352 °F) (Min)
**Autoignition:** No Data Available
**Flammability (Explosive) Limits (% by volume in air):** Lower: Not Applicable Upper: Not Applicable

**EXTINGUISHING MEDIA:** Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.
**PROTECTION OF FIRE FIGHTERS:**
**Fire Fighting Instructions:** This material will burn although it is not easily ignited. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.
**Combustion Products:** Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion.

## SECTION 6 ACCIDENTAL RELEASE MEASURES

**Protective Measures:** Eliminate all sources of ignition in vicinity of spilled material.
**Spill Management:** Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.
**Reporting:** Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required.

## SECTION 7 HANDLING AND STORAGE

**Precautionary Measures:** DO NOT USE IN HIGH PRESSURE SYSTEMS in the vicinity of flames, sparks and hot surfaces. Use only in well ventilated areas. Keep container closed.
Keep out of the reach of children.
**General Handling Information:** Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.
**Static Hazard:** Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating

procedures. For more information, refer to OSHA Standard 29 CFR 1910.106, 'Flammable and Combustible Liquids', National Fire Protection Association (NFPA 77, 'Recommended Practice on Static Electricity', and/or the American Petroleum Institute (API) Recommended Practice 2003, 'Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents'.
**Container Warnings:** Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

## SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

**GENERAL CONSIDERATIONS:**
Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

**ENGINEERING CONTROLS:**
Use in a well-ventilated area.

**PERSONAL PROTECTIVE EQUIPMENT**
**Eye/Face Protection:** No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.
**Skin Protection:** No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: 4H (PE/EVAL), Nitrile Rubber, Silver Shield, Viton.
**Respiratory Protection:** No respiratory protection is normally required.
If user operations generate an oil mist, determine if airborne concentrations are below the occupational exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection from the measured concentrations of this material. For air-purifying respirators use a particulate cartridge.
Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

**Color:** Red
**Physical State:** Liquid
**Odor:** Petroleum odor
**pH:** Not Applicable
**Vapor Pressure:** <0.01 mmHg @ 37.8 °C (100 °F)
**Vapor Density (Air = 1):** >1
**Boiling Point:** >315°C (599°F)
**Solubility:** Soluble in hydrocarbons; insoluble in water
**Freezing Point:** Not Applicable
**Specific Gravity:** 0.86 @ 15.6°C (60.1°F) / 15.6°C (60.1°F)
**Viscosity:** 6.8 cSt @ 100°C (212°F) (Min)

## SECTION 10 STABILITY AND REACTIVITY

**Chemical Stability:** This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.
**Incompatibility With Other Materials:** May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.
**Hazardous Decomposition Products:** None known (None expected)
**Hazardous Polymerization:** Hazardous polymerization will not occur.

## SECTION 11 TOXICOLOGICAL INFORMATION

**IMMEDIATE HEALTH EFFECTS**
**Eye Irritation:** The eye irritation hazard is based on evaluation of data for similar materials or product components.
**Skin Irritation:** The skin irritation hazard is based on evaluation of data for similar materials or product components.
**Skin Sensitization:** No product toxicology data available.
**Acute Dermal Toxicity:** The acute dermal toxicity hazard is based on evaluation of data for similar materials or product components.
**Acute Oral Toxicity:** The acute oral toxicity hazard is based on evaluation of data for similar materials or product components.
**Acute Inhalation Toxicity:** The acute inhalation toxicity hazard is based on evaluation of data for similar materials or product components.

**ADDITIONAL TOXICOLOGY INFORMATION:**
This product contains petroleum base oils which may be refined by various processes including severe solvent extraction, severe hydrocracking, or severe hydrotreating. None of the oils requires a cancer warning under the OSHA Hazard Communication Standard (29 CFR 1910.1200). These oils have not been listed in the National Toxicology Program (NTP) Annual Report nor have they been classified by the International Agency for Research on Cancer (IARC) as; carcinogenic to humans (Group 1), probably carcinogenic to humans (Group 2A), or possibly carcinogenic to humans (Group 2B). These oils have not been classified by the American Conference of Governmental Industrial Hygienists (ACGIH) as: confirmed human carcinogen (A1), suspected human carcinogen (A2), or confirmed animal carcinogen with unknown relevance to humans (A3).

## SECTION 12 ECOLOGICAL INFORMATION

**ECOTOXICITY**
The toxicity of this material to aquatic organisms has not been evaluated. Consequently, this material should be kept out of sewage and drainage systems and all bodies of water.

**ENVIRONMENTAL FATE**
This material is not expected to be readily biodegradable.

## SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. Oil collection services are available for used oil recycling or disposal. Place contaminated materials in containers and dispose of in a manner consistent with applicable regulations. Contact your sales representative or local environmental or health authorities for approved disposal or recycling methods.

## SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.
**DOT Shipping Description:** PETROLEUM LUBRICATING OIL, NOT REGULATED AS A HAZARDOUS MATERIAL FOR TRANSPORTATION UNDER 49 CFR
**Additional Information:**NOT HAZARDOUS BY U.S. DOT. ADR/RID HAZARD CLASS NOT APPLICABLE.

**IMO/IMDG Shipping Description:** PETROLEUM LUBRICATING OIL; NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER THE IMDG CODE

**ICAO/IATA Shipping Description:** PETROLEUM LUBRICATING OIL; NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER ICAO

## SECTION 15 REGULATORY INFORMATION

**EPCRA 311/312 CATEGORIES:** 1. Immediate (Acute) Health Effects: NO
2. Delayed (Chronic) Health Effects: NO
3. Fire Hazard: NO
4. Sudden Release of Pressure Hazard: NO
5. Reactivity Hazard: NO

REGULATORY LISTS SEARCHED:

| | |
|---|---|
| 01-1=IARC Group 1 | 03=EPCRA 313 |
| 01-2A=IARC Group 2A | 04=CA Proposition 65 |
| 01-2B=IARC Group 2B | 05=MA RTK |
| 02=NTP Carcinogen | 06=NJ RTK |
| | 07=PA RTK |

No components of this material were found on the regulatory lists above.

**CHEMICAL INVENTORIES:**
All components comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), ENCS (Japan), IECSC (China), KECI (Korea), TSCA (United States).

One or more components is listed on ELINCS (European Union). Secondary notification by the importer may be required.

One or more components does not comply with the following chemical inventory requirements: EINECS (European Union), ELINCS(European Union).

**NEW JERSEY RTK CLASSIFICATION:**
Under the New Jersey Right-to-Know Act L. 1983 Chapter 315 N.J.S.A. 34:5A-1 et. seq., the product is to be identified as follows: PETROLEUM OIL (Automatic transmission fluid)

**WHMIS CLASSIFICATION:**
This product is not considered a controlled product according to the criteria of the Canadian Controlled Products Regulations.

## SECTION 16 OTHER INFORMATION

**NFPA RATINGS:** Health: 0 Flammability: 1 Reactivity: 0

**HMIS RATINGS:** Health: 1 Flammability: 1 Reactivity: 0
(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

**LABEL RECOMMENDATION:**
Label Category : INDUSTRIAL OIL 1 - IND1

**REVISION STATEMENT:** This revision updates the following sections of this Material Safety Data Sheet: 1
**Revision Date:** December 22, 2006

**ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:**

| | |
|---|---|
| TLV - Threshold Limit Value | TWA - Time Weighted Average |
| STEL - Short-term Exposure Limit | PEL - Permissible Exposure Limit |
| | CAS - Chemical Abstract Service Number |

| | |
|---|---|
| ACGIH - American Conference of Government Industrial Hygienists | IMO/IMDG - International Maritime Dangerous Goods Code |
| API - American Petroleum Institute | MSDS - Material Safety Data Sheet |
| CVX - Chevron | NFPA - National Fire Protection Association (USA) |
| DOT - Department of Transportation (USA) | NTP - National Toxicology Program (USA) |
| IARC - International Agency for Research on Cancer | OSHA - Occupational Safety and Health Administration |

Prepared according to the OSHA Hazard Communication Standard (29 CFR 1910.1200) and the ANSI MSDS Standard (Z400.1) by the Chevron Energy Technology Company, 100 Chevron Way, Richmond, California 94802.

**The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.**

# Material Safety Data Sheet
acc. to ISO/DIS 11014

Printing date 11/13/2008 Reviewed on 11/13/2008

## 1 Identification of substance

**Trade name:** STRIPE FLUORESCENT RED/ORANGE

**Product code:** 0000200658

**Manufacturer/Supplier:** SEYMOUR OF SYCAMORE
917 Crosby Avenue
Sycamore, IL 60178
(815)-895-9101, www.seymourpaint.com

**Emergency information:** CHEMTEL 1-800-255-3924, 813-248-0585 *if located outside the U.S.*

## 2 Composition/Data on components

**Chemical Description:** This product is a mixture of the substances listed below with nonhazardous additions.

| Dangerous components: | | |
|---|---|---|
| 64742-89-8 | VM&P Naptha | 22.46% |
| 74-98-6 | propane | 12.6% |
| 1317-65-3 | Calcium Carbonate | 12.03% |
| 106-97-8 | n-butane | 7.4% |
| 110-19-0 | isobutyl acetate | 3.38% |
| 64742-47-8 | Mineral Spirits | 3.21% |

## 3 Hazards identification

**Hazard description:**  Irritant
Extremely flammable

**Physical dangers:** Extremely flammable.
Irritating to eyes.
Keep out of the reach of children.

**Effects of chronic overexposure:** May cause permanent brain and nervous system damage. Repeated overexposure can also damage kidneys, lungs, liver, heart, and blood. Intentional misuse by deliberately inhaling the contents may be harmful or fatal.

**NFPA ratings (scale 0 - 4):** Health- 1
Flammability- 3
Reactivity- 3

**HMIS-ratings (scale 0 - 4):** Health- 1
Flammability- 3
Physical Hazard- 3

## 4 First aid measures

**After inhalation:** Supply fresh air; consult doctor in case of complaints.

**After skin contact:** Remove contaminated clothing. Wash exposed area with soap and water.

**After eye contact:** Move to fresh air. Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

**After swallowing:** Contact physician or poison control center.

## 5 Fire fighting measures

**Extinguishing agents:** CO2, sand, extinguishing powder, or water spray. Fight larger fires with water spray or alcohol resistant foam.

**Protective equipment:** No special measures required.

## 6 Accidental release measures

**Personal safety precautions:** Wear protective equipment. Keep unprotected persons away.

**Environmental safety precautions:** Do not allow product to reach sewage systems or ground water.

**Measures for cleaning/ collecting:** Ensure adequate ventilation.

## 7 Handling and storage

**Fire/explosion protection:** Do not spray on a naked flame or any incandescent material. Do not smoke. Protect from electrostatic discharges.

(Contd. on page 2)

# Material Safety Data Sheet
acc. to ISO/DIS 11014

Printing date 11/13/2008 Reviewed on 11/13/2008

**Trade name: STRIPE FLUORESCENT RED/ORANGE**

(Contd. of page 1)

**Storage requirements:** Observe pressurized container storage regulations. Consult with your local authorities.

## 8 Exposure controls and personal protection:

| Components with limit values that require monitoring at the workplace: | |
|---|---|
| **74-98-6 propane** | |
| PEL | 1800 mg/m³, 1000 ppm |
| REL | 1800 mg/m³, 1000 ppm |
| TLV | Varies mg/m³, 1000 ppm |
| **106-97-8 n-butane** | |
| REL | 1900 mg/m³, 800 ppm |
| TLV | Varies mg/m³, 1000 ppm |
| **110-19-0 isobutyl acetate** | |
| PEL | 700 mg/m³, 150 ppm |
| REL | 700 mg/m³, 150 ppm |
| TLV | 713 mg/m³, 150 ppm |

**Protective hygienic measures:** Keep away from foodstuffs and animal feed. Wash hands after use.

**Breathing equipment:** A respirator is generally not necessary when using this product outdoors or in large open areas. In cases where short and/or long term overexposure exists, a charcoal filter respirator should be worn. Please consult an authority on chemical hygeine monitoring if you suspect overexposure conditions exist and need a specific recommendation on proper ventilation techniques and personal protection.

**Protection of hands:** Protective gloves. The glove material has to be impermeable and resistant to the substance. No glove recommendation can be given.

**Eye protection:** Tightly sealed goggles

## 9 Physical and chemical properties:

| | |
|---|---|
| **General Information:** | |
| **Odor:** | Aromatic |
| **Boiling point/Boiling range:** | -44°C |
| **Flash point:** | -19°C |
| **Ignition temperature:** | 365°C |
| **Auto igniting:** | Product is not self-igniting. |
| **Danger of explosion:** | Stable at normal temperatures. Can may burst when exposed to temperatures exceeding 120 degrees fahrenheit.<br>In use, may form flammable/explosive vapour-air mixture. |
| **Lower Explosion Limit:** | 0.9 Vol % |
| **Upper Explosion Limit:** | 10.9 Vol % |
| **Vapor Pressure:** | 40 PSI, 2750 hPa |
| **Density at 20°C:** | 0.85568 g/cm³ |
| **Specific Gravity:** | Between 0.77 and 0.85 (Water equals 1.00) |
| **VOC content:** | 530.2 g/l / 4.42 lb/gl |
| **VOC content (less exempt solvents):** | 49.7 % |
| **Water:** | 23.1 % |
| **MIR value:** | 49.7 % |
| **MIR Value:** | 0.62 |
| **Solids content:** | 26.1 % |

## 10 Stability and reactivity:

**Conditions to be avoided:** Do not allow the can to exceed 120 degrees Fahrenheit. Stable at normal temperatures.

**Possibility of Hazardous Reactions:** No dangerous reactions known.

## 11 Toxicological information:

**Primary effect on the skin:** No irritant effect.

**Primary effect on the eye:** Irritating effect.

**Sensitization:** No sensitizing effects known.

(Contd. on page 3)

# Material Safety Data Sheet
acc. to ISO/DIS 11014

Printing date 11/13/2008 Reviewed on 11/13/2008

**Trade name: STRIPE FLUORESCENT RED/ORANGE**

(Contd. of page 2)

**Additional toxicological information:** The product shows the following dangers according to internally approved calculation methods for preparations:

## 12 Ecological information

**Other information:** This product does not contain any chloroflourocarbons (CFC's),chlorinated solvents, lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyl (PBB), or polybrominated diphenyl ether (PDBE). No specific ecological data is available for this product.

**Acquatic toxicity:** Hazardous for water, do not empty into drains.

## 13 Disposal considerations

DISPOSAL METHOD: Dispose of in accordance with local, state, and federal regulations. Do not puncture, incinerate, or compact. Partially empty cans must be disposed of responsibly. Do not heat or cut empty containers with electric or gas torches.

**Recommendation:** Completely empty cans should be recycled.

## 14 Transport information:

| | |
|---|---|
| **Hazard class:** | 2.1 |
| **Identification number:** | N/A |
| **Label** | 2.1 |
| **ADR/RID class:** | 2 5F Gases |
| **UN-Number:** | 1950 |
| **IMDG Class:** | 2.1 |
| **Packaging group:** | II |
| **EMS Number:** | F-D,S-U |
| **Marine pollutant:** | No |
| **ICAO/IATA Class:** | 2.1 |
| **Propper shipping name:** | Aerosols, Flammable<br>Consumer Commodity ORM-D |

## 15 Regulations

**SARA Section 355 (extremely hazardous substances):**

None of the ingredients in this product are listed.

**SARA Section 313 (Specific toxic chemical listings):**

None of the ingredients is listed.

**TSCA (Toxic Substances Control Act):** All ingredients are listed.

**PROPOSITION 65 Chemicals known to cause cancer:**

| | |
|---|---|
| 100-41-4 | ethyl benzene |

**EPA:** A= Known human carcinogen B= Probable human carcinogen
C= Possible human carcinogen
D= Not classifiable as to human carcinogenicity: Inadequate human and animal evidence of carcinogenicity (or no data is available).

| | | |
|---|---|---|
| 110-19-0 | isobutyl acetate | D |

**IARC:** Group 2B: The ingredient is possibly carcinogenic to humans. There is limited evidence of carcinogenicity.
Group 3: The ingredient is unclassifiable as to its carcinogenicity to humans.

Group 2B: The ingredient is possibly carcinogenic to humans. There is limited evidence of carcinogenicity.
Group 3: The ingredient is unclassifiable as to its carcinogenicity to humans.

**ACGIH TLVs:** A1-designates a confirmed human carcinogen.
A2-designates a suspected human carcinogen.
A3-designates an animal carcinogen.
A4-designates "not classifiable as a human carcinogen".

| | | |
|---|---|---|
| 110-19-0 | isobutyl acetate | A4 |

**NIOSH:**

None of the ingredients is listed.

**Hazard symbols:** Irritant
Extremely flammable

**Risk phrases:** Extremely flammable.
Irritating to eyes.

(Contd. on page 4)

# Material Safety Data Sheet
acc. to ISO/DIS 11014

Printing date 11/13/2008 Reviewed on 11/13/2008

**Trade name: STRIPE FLUORESCENT RED/ORANGE**

(Contd. of page 3)

**Safety phrases:**
Keep out of the reach of children.
Keep in a cool place.
Keep container in a well-ventilated place.
Keep away from sources of ignition - No smoking.
Do not breathe gas/fumes/vapour/spray.
Avoid contact with eyes.
In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Do not empty into drains, dispose of this material and its container at hazardous or special waste collection point
If swallowed, seek medical advice immediately and show this container or label.
Use only in well-ventilated areas.

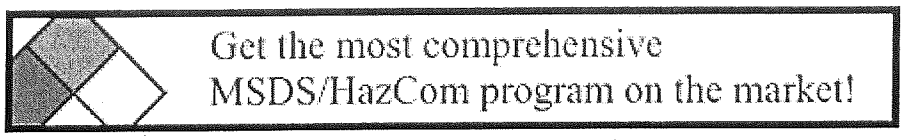
**Special labeling of certain preparations:**
Keep out of the reach of children.

## 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

**Contact:** Regulatory Affairs

**Abbreviations and acronyms:**
ADR: Accord européen sur le transport des marchandises Dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IATA: International Air Transport Association
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
VOC: Volatile Organic Compounds (USA, EU)




# Material Safety Data Sheet

SECTION I - Material Identity
SECTION II - Manufacturer's Information
SECTION III - Physical/Chemical Characteristics
SECTION IV - Fire and Explosion Hazard Data
SECTION V - Reactivity Data
SECTION VI - Health Hazard Data
SECTION VII - Precautions for Safe Handling and Use
SECTION VIII - Control Measures
SECTION IX - Label Data
SECTION X - Transportation Data
SECTION XI - Site Specific/Reporting Information
SECTION XII - Ingredients/Identity Information

## SECTION I - Material Identity

| | |
|---|---|
| Item Name | |
| Part Number/Trade Name | ZRC COLD GALVANIZING COMPOUND (AEROSOL) |
| National Stock Number | 8030010151550 |
| CAGE Code | 07957 |
| Part Number Indicator | D |
| MSDS Number | 128913 |
| HAZ Code | B |

## SECTION II - Manufacturer's Information

| | |
|---|---|
| Manufacturer Name | Z R C PRODUCTS CO |
| P.O. Box | N/K |
| Street | 21 NEWPORT AVE |
| City | QUINCY |
| State | MA |
| Country | US |
| Zip Code | 02171 |
| Emergency Phone | 800-424-9300 CHEMTREC/617-328-6700 |
| Information Phone | 617-328-6700 |

## MSDS Preparer's Information

| | |
|---|---|
| MSDS Preparer Name | STEVE COLLINS |
| Street | 21 NEWPORT AVENUE |
| City | QUINCY |
| State | MA |
| Zip Code | 02171 |
| Date MSDS Prepared/Revised | 27FEB92 |
| Date of Technical Review | 14AUG92 |
| Active Indicator | N |
| Item Manager | GSA |

## Alternate Vendors

| | |
|---|---|
| Vendor #1 Name | STEVEN INDUSTRIES |
| Vendor #1 CAGE | 33150 |
| Vendor #5 CAGE | BNTNV |

## SECTION III - Physical/Chemical Characteristics

| | |
|---|---|
| Specification Number | N/K |
| Specification Type/Grade/Class | N/K |
| Hazard Storage Compatibility Code | N/-K |
| NRC License Number | N/K |
| Net Propellant Weight (Ammo) | N/K |
| Appearance/Odor | GREY LIQ W/ODOR TYPICAL OF ALIPHATIC & AROMATIC HYDROCARBONS MIXED W/KETONE |
| Boiling Point | -42 TO 144C |
| Melting Point | N/K |
| Vapor Pressure | 50 @ 21C |
| Vapor Density | > AIR |
| Specific Gravity | 1.14 @ 25C |
| Decomposition Temperature | N/K |
| Evaporation Rate | FASTER THAN ETHER |
| Solubility in Water | INSIGNIFICANT |
| Percent Volatiles by Volume | 59(WT) |
| Chemical pH | N/K |
| Corrosion Rate | N/K |
| Container Pressure Code | 4 |
| Temperature Code | 8 |
| Product State Code | U |

## SECTION IV - Fire and Explosion Hazard Data

| | |
|---|---|
| Flash Point Method | UNK |
| Lower Explosion Limit | 0.9 (VOL) |

| | |
|---|---|
| Upper Explosion Limit | 66.4 (VOL) |
| Extinguishing Media | CLASS B EXTINGSHR, FOAM, DRY CHEM. DONT USE WTR] USE FULL PROTECT EQUIP & SCBA IN ENCLOSURES. HIGHLY FLAMM/MOD EXPLOS |
| Special Fire Fighting Procedures | DONT USE WATER IN ANY FORM. WATER MAY BE USED TO COOL CLSD CNTNRS, BUT TAKE CARE TO PREVENT WATER ACCESS TO WET PAINT & SPRAY RESIDUES. SEE SPILL SECTION |
| Unusual Fire/Explosion Hazards | KEEP CNTNR CLSD. ISOLATE FROM HEAT/IGNIT. APPLIC TO HOT SRFC REQ CAUTION. OVEREXPOS TO DECOMP-HLTH HZD. HEAVIER THAN AIR, FLOW TO DISTANT IGNIT SOURCE/FLASHBCK* |

## SECTION V - Reactivity Data

| | |
|---|---|
| Stability | YES |
| Stability Conditions to Avoid | STORE IN DRY AREAS AWAY FROM OXIDIZING AGENTS, ACIDS, ALKALIES, & WATER. AVOID DUSTING & ACCUMULATION OF SPRAY RESIDUES |
| Materials to Avoid | MAY REACT VIOLENTLY W/STRONG OXIDIZING AGENTS SUCH AS CHLORINE, OXYGEN, WATER, WEAK OR CONCENTRATED ACIDS |
| Hazardous Decomposition Products | HYDROGEN GAS ACCOMPANIED W/ADDED RISK OF EXPLOSION/FIRE. FUMES OF ZINC OXIDES, OXIDES OF CARBON & NITROGEN |
| Hazardous Polymerization | NO |
| Polymerization Conditions to Avoid | SENSITIVITY TO IMPACT: IMPACT W/SPARKING MAY PRODUCE DISCHARGE OF CONTENTS WITH FIRE OR EXPLOSION HAZARD |
| LD50 - LD50 Mixture | N/K |

## SECTION VI - Health Hazard Data

| | |
|---|---|
| Route of Entry: Skin | YES |
| Route of Entry: Ingestion | YES |
| Route of Entry: Inhalation | YES |
| Health Hazards - Acute and Chronic | PROPANE IS ASPHYXIANT. SOLVENTS IN MAT'L ARE CENTRAL NERVOUS SYSTEM DEPRESSANTS (DROWSINESS, DIZZINESS, HEADACHE, SLURRED SPEECH, |

| | |
|---|---|
| | INTOXICATION W/EUPHORIA/DEPRESSION, STUPOR, UNCONSCIOUSNESS) INHAL: NOSE, THROAT, LUNG IRRIT. SKIN: DEFATTING, DERMATITIS. EYE: TEARS, BURNING, IRRITATION, CONJUNCTIVITIS. ** |
| Carcinogenity: NTP | NO |
| Carcinogenity: IARC | NO |
| Carcinogenity: OSHA | NO |
| Explanation of Carcinogenity | N/K*MOISTR & ACID CONTAM CAN FORM HYDROGEN GAS, CAUSE CANS TO BULGE. DON'T MOVE, OPEN, PUNCTURE CANS. CALL 617-328-6700 |
| Symptoms of Overexposure | ** INGEST: POISONING, MAY BE FATAL; AVOID ASPIRATION. LUNG CONTACT MAY CAUSE CHEMICAL PNEUMONITIS. EXCESSIVE INHAL: FUME FEVER, ZINC SHAKES, ETC. REPEAT/PROLONG OVEREXPOSE: PERMANENT BRAIN, CENTRAL NERVOUS SYSTEM DAMAGE. MINOR EMBRYOTOXIC/FETOTOXIC EFFECTS (RATS). MAY CAUSE ALLERGIC SKIN REACTION |
| Medical Cond. Aggrevated by Exposure | N/K |
| Emergency/First Aid Procedures | INHAL: REMOVE TO FRESH AIR. KEEP WARM, QUIET. GIVE ARTIF RESPIRATION IF REQUIRED. GET MED AID. EYES: WASH IMMED WITH LARGE AMOUNT WATER 15 MIN. TAKE TO PHYSICIAN FOR MED AID. SKIN: WASH CONTACT AREA PROMPTLY W/SOAP & WATER. PROMPTLY REMOVE PAINT-WET CLOTHING. CONSULT PHYSICIAN IF IRRIT PERSISTS. INGEST: DO NOT INDUCE VOMITING WITHOUT MEDICAL ADVICE. SEE PHYSICIAN, EMERGENCY ROOM, POISON CTR IMMED |

## SECTION VII - Precautions for Safe Handling and Use

| | |
|---|---|
| Steps if Material Released/Spilled | LRG: EVAC AREA. ALL SPILLS: ELIMINATE IGNIT SOURCES. DIKE, CONTAIN W/DRY, INERT MAT'L. ELIMINATE MOISTURE SOURCES. DONT USE WATER IN CLEANUP OPERATIONS. RECOVER FREE LIQ. USE ABSORB FOR REST. DONT FLUSH W/WATER. USE NONSPARK TOOLS. SPILLS-SLIPPERY |
| Neutralizing Agent | N/K |

| | |
|---|---|
| Waste Disposal Method | DISPOSE OF ABSORBED MAT'L/FREE WASTE LIQ IN DRY CNTNRS ACCORDING TO LOCAL, STATE & FED REGS. DISPOSE OF MAT'LS INCLUDING EMPTY CANS ACCORDING TO FED, STATE & LOCAL REGS. DONT INCINERATE. DONT FLUSH INTO SEWERS. CNTNRS MAY EXPLOD W/HEAT (EVEN EMPTY) |
| Handling and Storage Precautions | NONSPARK TOOLS. VENT USE AREAS. EXCLUDE IGNIT SOURCE/HEAT. NO SMOKING IN THESE AREAS. PREVENT ACCUMULATION (SUFF VENT)OF VAPOR IN LOW AREAS/SUMPS. MA |
| Other Precautions | MAT'L IS ELECTRICALLY CONDUCTIVE. FLAMM LIQ. STORE IN COOL, CLEAN DRY, VENTED, FIRE RESISTANT(MEET OSHA REQ) AREA. DONT STORE IN DIRECT SUNLIGHT. STORE IN CLSD LABELED CANS (LABELS SPECIFY FLAMMABILITY). DONT STORE ABOVE 49C. *** |

## SECTION VIII - Control Measures

| | |
|---|---|
| Respiratory Protection | OUTDOOR/OPEN AREAS: NIOSH/MSHA RSPRTR (FILTER DUST PARTIC) DURING & AFTER APPLIC (UNLESS BELOW TLV). RESTRICT VENT: NIOSH/MSHA RSPRTR (COMBINATN ORGANIC VAPOR, DUST PARTIC). CONFINED: AIR LINE TYPE RSPRTR/HOOD. FOLLOW RSPRTR MFRS DIRECTIONS |
| Ventilation | WORK PLACE AREAS REQUIRE EXHAUST VENT IN ACCORDANCE W/OSHA REGULATIONS 29CFR1910.107D TO MAINTAIN LEVELS BELOW TLV |
| Protective Gloves | NEOPRENE GLOVES |
| Eye Protection | SFTY GOGGLES W/UNPERFORATED SIDE SHIELD# |
| Other Protective Equipment | WEAR NEOPRENE APRONS OVER FITTED CLOTHES,CHEM RESISTANT BOOTS W/STEEL TOES,PROTECTIVE CREAM,EYEWASH FOUNTAIN,SFTY SHOWER |
| Work Hygenic Practices | OBSERVE ALL RULES OF GOOD HYGIENE DURING & AFTER USE. WASH BEFORE SMOKING OR EATING. WASH/DISCARD CONTAM CLOTHING |
| Supplemental Health/Safety Data | *** DONT INGEST. DONT PUNCTURE, DRAG OR SLIDE CNTNR. |

| | |
|---|---|
| | KEEP AWAY FROM CHILDREN. EMPTY CONTAINERS MAY CONTAIN EXTREMELY FLAMMABLE RESIDUES AND EXPLODE IF HEATED. #SHOULD BE USED WHERE SPLASHING INTO EYES IS POSSIBLE |
| Disposal Code | O |

## SECTION IX - Label Data

| | |
|---|---|
| Protect Eye | NO |
| Protect Skin | NO |
| Protect Respiratory | NO |
| Chronic Indicator | UNKNOWN |
| Contact Code | UNKNOWN |
| Fire Code | UNKNOWN |
| Health Code | UNKNOWN |
| React Code | UNKNOWN |

## SECTION X - Transportation Data

| | |
|---|---|
| Container Quantity | 12 |
| Unit of Measure | OZF |

## SECTION XI - Site Specific/Reporting Information

## SECTION XII - Ingredients/Identity Information

| | |
|---|---|
| Ingredient # | 01 |
| Ingredient Name | METHYL ETHYL KETONE (SARA III) (VAPOR PRESSURE 75 MM @ 20C) (LEL 1.8) |
| CAS Number | 78933 |
| NIOSH Number | EL6475000 |
| Proprietary | NO |
| Percent | 35 |
| OSHA PEL | 200 PPM/300 PPM STEL |
| ACGIH TLV | 200 PPM/300 PPM STEL |
| Recommended Limit | OSHA TWA 50 PPM |
| Ingredient # | 02 |
| Ingredient Name | (ZNCPD) ZINC (SARA III) |
| CAS Number | 7440666 |
| NIOSH Number | ZG8600000 |
| Proprietary | NO |
| Percent | 37.4 |

| | |
|---|---|
| OSHA PEL | TWA 50 PPM/15 MG/M3* |
| ACGIH TLV | NOT ESTABLISHED |
| Recommended Limit | *(TOTAL DUST) |
| Ingredient # | 03 |
| Ingredient Name | (ZNCPD) ZINC OXIDE |
| CAS Number | 1314132 |
| NIOSH Number | ZH4810000 |
| Proprietary | NO |
| Percent | 1.6 |
| OSHA PEL | 15MG/M3 TDUST/5 FUME |
| ACGIH TLV | 10MG/M3 TDUST; 9293 |
| Recommended Limit | **FUME ***DUST |
| Ingredient # | 04 |
| Ingredient Name | XYLENE (SARA III) (VAPOR PRESSURE 6 MM @ 20 C) (LEL 1.0) |
| CAS Number | 1330207 |
| NIOSH Number | ZE2100000 |
| Proprietary | NO |
| Percent | 10 |
| OSHA PEL | 100 PPM/150 PPM STEL |
| ACGIH TLV | 100 PPM/150 PPM STEL |
| Recommended Limit | NONE SPECIFIED |
| Ingredient # | 05 |
| Ingredient Name | VM & P NAPHTHA (VAPOR PRESSURE 2 MM @ 20C) (LEL 0.9) |
| CAS Number | 8032324 |
| NIOSH Number | OI6180000 |
| Proprietary | NO |
| Percent | <5 |
| OSHA PEL | 300 PPM/400 STEL |
| ACGIH TLV | 300 PPM |
| Recommended Limit | NONE SPECIFIED |
| Ingredient # | 06 |
| Ingredient Name | PROPANE (VAPOR PRESSURE 123 PSIA @ 20C) (LEL 2.3) |
| CAS Number | 74986 |
| NIOSH Number | TX2275000 |
| Proprietary | NO |
| Percent | 15 |
| OSHA PEL | 1000 PPM/1800 MG/M3 |
| ACGIH TLV | SMPL ASPHYXIANT |
| Recommended Limit | NONE SPECIFIED |

439-4896

# PEEL AWAY® 1

# SPECIFICATIONS AND DATA

1. PRODUCT NAME:
*PEEL-AWAY 1.*

2. MANUFACTURER
*National Office:*
Dumond Chemicals
1501 Broadway
New York, NY 10036
Phone: (212) 869-6350
FAX: 212-764-5762
e-mail: plaway@aol.com
website: www.dumondchemicals.com

3. PRODUCT DESCRIPTION

*Basic Use:* PEEL-AWAY I - The PEEL-AWAY I System is an environmentally safe method of removing up to thirty-two (32) coats of paint with a single application from most surfaces, and there are NO FUMES AND NO FLAMMABLE SOLVENTS. The system includes a paste that is spread or sprayed over the surface to be stripped. This paste is then covered with a fibrous laminated cloth which controls evaporation, and is left on until all of the paint is dissolved. The laminated cloth is then removed with the bulk of the paste and paint adhering to it and the stripped surface is washed clean and neutralized. The fibrous laminated cloth also protects the passerby while the stripping process is taking place. The PEEL-AWAY I System is excellent for turned, carved, or molded surfaces where a cast of the stripped surface is often seen on the cloth as it is removed. It is also especially suitable for plain or ornate plaster walls or ceilings, brick, concrete, stucco, softwoods, cast iron, steelwork, marble or fiberglass.

*Lead Paint Abatement:* The PEEL-AWAY 1 System is especially suited for removing lead paint and has two major advantages:(1) The paste is applied to the surface and then is covered by the PEEL-AWAY fibrous laminated cloth, keeping the paint in a wet or damp state and preventing lead particles from getting into the air or onto the surrounding area; and (2) When the stripping job is finished and the cloth is removed the bulk of the paste and lead paint comes off intact on the cloth for proper disposal. Refer to federal and local regulations for disposal of lead-based material.

*Limitations:* PEEL-AWAY I - Product efficiency is reduced below a temperature of 40°F. It will not work on two part epoxy paints, chlorinated rubber, cementitious paints, baked finishes, or other exotic coatings. Do not use on hardwoods except where the surface will be repainted. Do not use on aluminum. Test patches should be made on unknown surface coatings.

4. TECHNICAL DATA

PEEL-AWAY I - Interior/Exterior
Paint Stripper
Form: Paste
Viscosity: 26.5
Specific Gravity: 1.44
Wt./Gal.: 12.0 lbs.
Flash Point: None
Solid Content: 58.0
VOC: 0
PH: 13.0

5. INSTALLATION

*PREPARATORY WORK:* It is often impossible to know the type or condition of the surface before paint is removed. Before a project is started it is important that a small test area be done typical of the surface to be stripped to ensure that the results will be satisfactory. This will also teach the first time user how to handle the PEEL-AWAY System and how to gauge the important thickness at which the product is applied to the surface and the time values for removing the PEEL-AWAY Cloth. Applying PEEL-AWAY too thinly or unevenly or removing too quickly may result in more than one application, thereby increasing your material and labor costs. *Precautions:* Protect areas not being stripped with polyethylene and masking tape. Note: PEEL-AWAY I will not attack glass or plastic surfaces but will etch aluminum. Workmen should wear rubber gloves taped to their sleeves, wear face shield or goggles, and a hat, especially where working at head height and above. When spraying or "hosing down" wear rubber or polyethylene rain suit so as to avoid splash to skin and eyes and follow spraying instructions that are supplied with machinery.

*Application:* Apply paste 1/8" to 1/4", according to age and thickness of paint, with either trowel or spray equipment. If using a trowel to apply, on irregular surfaces use a nylon brush to force paste into crevices. Then use the trowel to apply further coating. If using spray equipment this is not necessary since the product is applied evenly into all irregular surfaces. This will eliminate air pockets and additional touch up work.

Cover paste with PEEL-AWAY fibrous laminated cloth printed polyethylene side facing out. Rub gently to remove air and pierce remaining air bubbles with knife. The cloth comes in one square meter size and can be applied easily to the

surface. Leave on for up to 24 hours or longer according to test patch findings.

Do not rely on the tension between the cloth and paste to remove cloth with paste/paint. Instead, remove by sliding PEEL-AWAY tool or taping knife into dried-up paste around the edges of the cloth, easing paint, paste, and cloth away from the surface in one piece. Remove as much residue as possible with tool before clean-up procedure. Collect PEEL-AWAY cloth complete with paste and paint and remaining residue, put into plastic bags and dispose of in compliance with local regulation.

*Exterior Clean Up:* For exterior work, hosing off the residue with water can help speed up the cleaning process and anything from a simple hose to a pressure jet or steam can be used. However, pressure should be kept low on woodwork and sensible precautions should be taken to protect plant life, etc. from splash back, especially those sensitive to alkalinity.

Mist surface lightly with water spray. Then with a nylon bristle scrub brush agitate surface to loosen all residue. Thoroughly scrub surface being sure to get at all crevices, grooves, cracks, etc.

*Interior Clean Up:* Interior cleaning can be accomplished with a spray bottle of water or pail with a sponge. Make sure surface is entirely clean of any paint/paste residue.

Let dry for 24 hou rs before proceeding with neutralizing process for both interior and exterior surfaces.

*Neutralization:* Failure to properly clean and "neutralize" the surface will result in an alkaline residue that may cause an unsightly white haze.

Alkaline residues may also interfere with performance of clear sealers or future paint coatings. We suggest the PEEL-AWAY Neutralizer for this neutralization process and all pertinent instructions therein pertaining to the neutralization process should be followed.

Note: Good painting practice suggests monitoring surface with a moisture meter. Wood which is too damp for painting is above 15% and the most optimal painting is at 12% moisture content.

Note: Good painting practice suggests monitoring surface with a moisture meter. Wood which is too damp for painting is above 15% and the most optimal painting is at 12% moisture content. Cedar, Redwood and Cypress woods have high water soluble content (resin and/or tannic acid) and extra drying time is necessary before painting otherwise staining may occur. Drying time could be 60/90 days or longer in some instances depending on the moisture absorbed by the wood.

## 6. RE-PAINTING WOOD SURFACES:

We strongly recommend that a good 100% solid acrylic primer be used to repaint wood surfaces after stripping with PEEL-AWAY I and not an oil based primer. This will allow the surface to breathe and in most cases will compensate for any higher level of pH left on the surface. A good acrylic primer can also be applied to damp surfaces so moisture levels should not be as critical either.

## 7. AVAILABILITY AND COST

*Availability:* All PEEL-AWAY products are available through a network of product distributors and paint stores. Call Dumond Chemicals, Inc. in New York at (212)869-6350 for the nearest distributor.

Cost will vary depending upon type and conditions to be stripped and number of layers to be removed. PEEL-AWAY I assists in estimating a project since in a single application thirty-two (32) coats of paint have been removed; thus, in most projects a single application will remove all of the paint. The PEEL-AWAY I product has an average coverage of about 20 to 25 sq. feet per gallon.

## 8. WARRANTY

Dumond Chemicals, Inc. warran all of its products to be free fro defects, and makes no othe warranties with respect to it products. express or implie including without limitation the implie warranties of MERCHANTABILITY O FITNESS FOR PARTICULA PURPOSE. Dumond Chemicals, In liability shall be limited in all events t supplying sufficient products to re treat the specific areas to whic defective product has been applie Dumond Chemicals, Inc. shall hav no other liability, including liability fo incidental, consequential or resulta damages whether due to breach warranty or negligence. This warrant may not be modified or extended b representatives of Dumond Chemical Inc. or its distributors, and dealers.

## 9. MAINTENANCE

No special service of the treate area is required following the pair removal process. No maintenance i required for PEEL-AWAY products.

Mixing or agitation before use i optional.

## 10. TECHNICAL SERVICES

Dumond Chemicals, Inc. employs direct personal assistance staff on han to answer technical questions t architects, building owners, contractor etc. Also available are trained sale representatives and technical peopl for on-site assistance. A list of qualifie contractors and dealer outlets is als available, For assistance call the Hom Office at (212) 869-6350.

# Material Safety Data Sheet

Date last reviewed: January 1, 2008

## I. General Information

| | |
|---|---|
| Chemical Name & Synonyms<br>Proprietary Blend | Trade Name & Synonyms<br>Peel Away 1 |
| Chemical Family<br>Alkaline | Formula<br>Mixture |
| Proper DOT Shipping Name<br>Containers 2.2 lbs. (1 kg) or smaller: ORM-D<br>Containers greater than 2.2 lbs. (1 kg):<br>Sodium Hydroxide Solid Mixture, 8, UN1823, PGII | DOT Hazard Classification<br>Class 8, PGII (Corrosive Material) |
| Manufacturer<br>Dumond Chemicals, Inc. | Manufacturer's Phone Number<br>(212) 869-6350 |
| Manufacturer's Address<br>1501 Broadway, New York, NY 10036 | Emergency Number:<br>(800) 457-4280 |

## II. Ingredients

| Principal Hazardous Components | CAS # | Percent | PEL | TLV |
|---|---|---|---|---|
| Calcium Hydroxide | 1305-62-0 | 21 | 5 $mg/m^3$ TWA (respirable fraction) | 5 $mg/m^3$ TWA |
| Magnesium Hydroxide | 1309-42-8 | 16 | None Established | None Established |
| Sodium Hydroxide | 1310-73-2 | 9 | 2 $mg/m^3$ TWA | 2 $mg/m^3$ Ceiling |
| Non-hazardous Ingredients | N/A | Balance | None Established | None Established |

SARA 313: This product contains no chemicals that are regulated under SARA Title III, section 313.

## III. Physical Data

| | |
|---|---|
| Boiling Point (°F)<br>Greater than 212 | Specific Gravity ($H_20$ =1)<br>1.33 |
| Vapor Pressure (mm Hg)<br>@ 20°C same as water | Percent Volatile by Volume (%)<br>51.5 |
| Vapor Density (Air=1)<br>same as water | Evaporation Rate (Butyl Acetate =1)<br>same as water |
| Solubility in Water<br>Complete | pH<br>13 |
| Appearance & Odor<br>White paste, no odor. | |

## IV. Fire & Explosion Hazard Data

| | | |
|---|---|---|
| Flash Point (Test Method<br>None | Autoignition Temperature<br>None | |
| Flammable Limits<br>None | LEL<br>N/A | UEL<br>N/A |
| Extinguishing Media<br>This material is not combustible. Use media appropriate for the surrounding fire. | | |
| Special Fire Fighting Procedures<br>Wear full emergency equipment and NIOSH approved positive pressure SCBA. Cool containers with water. | | |
| Unusual Fire & Explosion Hazards<br>At elevated temperatures containers may rupture. Contents are corrosive. All personal contact should be avoided. | | |

| | | | |
|---|---|---|---|
| HMIS Ratings | Health: 3 | Flammability: 0 | Reactivity: 0 |

## V. Health Hazard Data

| OSHA Permissible Exposure Limit | ACGIH Threshold Limit Value |
|---|---|
| See Section II | See Section II |
| Carcinogen - NTP Program | Carcinogen - IARC |
| No | No |

Symptoms of Exposure

Acute Effects: Eyes: May cause severe burns with possible permanent damage. Skin: May cause chemical burns with reddening and pain. Inhalation: May cause eye and respiratory irritation. Ingestion: May cause burns to mouth and gastrointestinal corrosion.

Chronic Effects: Repeated skin contact with dilute solutions or mists may cause dermatitis.

Medical Conditions Aggravated By Exposure:

Individuals with chronic respiratory or skin diseases may be at risk from exposure.

Primary Route(s) of Entry

Eye, skin, ingestion

Emergency First Aid

Eye: Flush with water for 30 minutes. Get immediate medical attention. Skin: Flush thoroughly w/water for 15 minutes. Remove contaminated clothing. Get medical attention for irritation. Inhalation: Remove to fresh air. Get immediate medical attention. Ingestion: If conscious, give water or milk. Do not induce vomiting. Get immediate medical attention.

## IV. Reactivity Data

| Stability | | Unstable / Stable | Conditions to Avoid |
|---|---|---|---|
| | X | Stable | N/A |

Incompatibility

Acids, flammable liquids, organic halogens, nitromethane and metals such as aluminum, tin or zinc.

| Hazardous Polymerization | | May Occur / Will Not Occur | Conditions to Avoid |
|---|---|---|---|
| | X | Will Not Occur | N/A |

Hazardous Decomposition

None known.

## VII. Environmental Protection Procedures

Spill Response

Wear appropriate protective clothing. Collect into closable containers. Wash spill area with water. Prevent runoff from entering sewers or waterways. Report spills as required.

Waste Disposal Method

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

## VIII. Special Protection Information

| Eye Protection | Skin Protection |
|---|---|
| Chemical safety goggles/Faceshield | Rubber or neoprene gloves |
| Respiratory Protection (Specific Type) | Ventilation Recommended |
| For spray application, wear a NIOSH approved dus respirator & eye protection. | None normally required. If exposure limits are exceeded, local exhaust may be required. |

Other Protection

Impervious apron, boots, safety shower, eye wash as needed.

## IX. Special Precautions

Hygienic Practices in Handling & Storage

Store in a cool, well ventilated area away from acids and other incompatible substances.

Work Practices

Prevent eye and skin contact. Do not breathe mists or aerosols.

Other Precautions

Use only with appropriate protective equipment. Wash thoroughly after use.

# Safety Data Sheet
**acc. to OSHA HCS**

Printing date 10/09/2014 Revised On 10/09/2014

## 1 Identification of the substance and manufacturer

**Trade name:** **SPRAY GLO FLUORESCENT ORANGE**

**Product code:** 0000161617
**Product category** PC9a Paints and coatings.
**Manufacturer/Supplier:** Seymour of Sycamore
917 Crosby Avenue
Sycamore, IL 60178
Phone: 815-895-9101 www.seymourpaint.com
**Emergency telephone number:** CHEMTEL 1-800-255-3924, 813-248-0585 *if located outside the U.S.*

## 2 Hazard(s) identification

**Classification of the substance or mixture**

Flam. Aerosol 1 H222 Extremely flammable aerosol.
Press. Gas H280 Contains gas under pressure; may explode if heated.
Carc. 2 H351 Suspected of causing cancer.
STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.
Eye Irrit. 2A H319 Causes serious eye irritation.

**GHS Hazard pictograms**



GHS02 GHS04 GHS07 GHS08

**Signal word** Danger
**Hazard statements**
Extremely flammable aerosol.
Contains gas under pressure; may explode if heated.
Causes serious eye irritation.
Suspected of causing cancer.
May cause damage to organs through prolonged or repeated exposure.

**Precautionary statements**
If medical advice is needed, have product container or label at hand.
Keep out of reach of children.
Read label before use.
Obtain special instructions before use.
Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
Do not spray on an open flame or other ignition source.
Pressurized container: Do not pierce or burn, even after use.
Wash hands thoroughly after handling.
Wear protective gloves/protective clothing/eye protection/face protection.
Do not handle until all safety precautions have been read and understood.
Do not breathe dust/fume/gas/mist/vapors/spray.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Get medical advice/attention if you feel unwell.
IF exposed or concerned: Get medical advice/attention.
If eye irritation persists: Get medical advice/attention.
Store locked up.
Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F.
Store in a well-ventilated place.
Dispose of contents/container in accordance with local/regional/national/international regulations.

## 3 Composition/information on ingredients

**Chemical characterization: Mixtures**
**Chemical Description:** This product is a mixture of the substances listed below with nonhazardous additions.

| **Dangerous components:** | | |
|---|---|---|
| 74-98-6 | propane | 18.97% |
| 64742-47-8 | Mineral Spirits | 13.85% |
| 1317-65-3 | Calcium Carbonate | 13.23% |
| 106-97-8 | n-butane | 11.14% |
| 110-19-0 | isobutyl acetate | 7.9% |
| 64742-94-5 | Solvent naptha, heavy aromatic | 4.61% |
| 64742-89-8 | VM&P Naphtha | 3.12% |
| 68410-97-9 | Low boiling point naphtha | 1.06% |

## 4 First-aid measures

**After inhalation:** Supply fresh air; consult doctor in case of complaints.
**After skin contact:** Remove contaminated clothing. Wash exposed area with soap and water.
**After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
**After swallowing:** Rinse out mouth and then drink plenty of water.
Rinse mouth with water. Do not induce vomiting.

**Most important symptoms and effects:** Dizziness
**Indication of any immediate medical attention needed:** No further relevant information available.

## 5 Fire-fighting measures

**Extinguishing agents:** CO2, extinguishing powder or water spray. Fight larger fires with water spray.

(Contd. on page 2)

# Safety Data Sheet
acc. to OSHA HCS

Printing date 10/09/2014 Revised On 10/09/2014

**Trade name: SPRAY GLO FLUORESCENT ORANGE**

(Contd. of page 1)

**Special hazards:** Can form explosive gas-air mixtures.
**Protective equipment for firefighters:** A respiratory protective device may be necessary.

## 6 Accidental release measures

**Personal precautions, protective equipment and emergency procedures:** Wear protective equipment. Keep unprotected persons away.
Use respiratory protective device against the effects of fumes/dust/aerosol.

**Methods and material for containment and cleaning up:** Ensure adequate ventilation.

## 7 Handling and storage

**Precautions for safe handling** Use only in well ventilated areas.
**Storage requirements:** Keep away from sources of heat and direct sunlight. Do not warehouse in subfreezing conditions. Store locked up.

## 8 Exposure controls/personal protection

| Components with limit values that require monitoring at the workplace: | |
|---|---|
| **74-98-6 propane** | |
| PEL (USA) | Long-term value: 1800 mg/m³, 1000 ppm |
| REL (USA) | Long-term value: 1800 mg/m³, 1000 ppm |
| TLV (USA) | refer to Appendix F |
| **106-97-8 n-butane** | |
| REL (USA) | Long-term value: 1900 mg/m³, 800 ppm |
| TLV (USA) | Short-term value: 2370 mg/m³, 1000 ppm |
| **110-19-0 isobutyl acetate** | |
| PEL (USA) | Long-term value: 700 mg/m³, 150 ppm |
| REL (USA) | Long-term value: 700 mg/m³, 150 ppm |
| TLV (USA) | Long-term value: 713 mg/m³, 150 ppm |

**Hygienic protection:** Wash hands after use.
Do not eat or drink while working.
**Breathing equipment:** A respirator is generally not necessary when using this product outdoors or in large open areas. In cases where short and/or long term overexposure exists, a charcoal filter respirator should be worn. If you suspect overexposure conditions exist, please consult an authority on chemical hygeine.
**Hand protection:** Protective gloves. The glove material must be impermeable and resistant to the substance.
**Eye protection:** Tightly sealed goggles

## 9 Physical and chemical properties

**Appearance:** Aerosol.
**Odor:** Aromatic
**Odor threshold:** Not determined.

**pH-value:** Not determined.
**Melting point/Melting range** Undetermined.
**Boiling point:** -44 °C (-47 °F)

**Flash point:** -19 °C (-2 °F)
**Flammability (solid, gas):** Extremely flammable.

**Decomposition temperature:** Not determined.

**Auto igniting:** Product is not self-igniting.

**Danger of explosion:** In use, may form flammable/explosive vapour-air mixture.
**Lower Explosion Limit:** 0.5 Vol %
**Upper Explosion Limit:** 10.9 Vol %

**Vapor pressure:** Not determined.
**Relative Density:** Between 0.77 and 0.85 (Water equals 1.00)
**Vapour density** Not determined.
**Evaporation rate** Not applicable.
**Partition coefficient: n-octonal/water:** Not determined.

**Solubility:** Not determined.
**Viscosity:** Not determined.

**VOC content:** 544.0 g/l / 4.54 lb/gl
**VOC content (less exempt solvents):** 60.2 %
**Water:** 13.0 %
**MIR Value:** 0.90

**Solids content:** 26.8 %

## 10 Stability and reactivity

**Reactivity:** Stable at normal temperatures.

(Contd. on page 3)

# Safety Data Sheet
**acc. to OSHA HCS**

Printing date 10/09/2014 Revised On 10/09/2014

**Trade name: SPRAY GLO FLUORESCENT ORANGE**

(Contd. of page 2)

**Conditions to avoid:** Do not allow can to exceed 120 degrees Fahrenheit. Do not warehouse in subfreezing temperatures.
**Chemical stability:** Not fully evaluated.
**Possibility of hazardous reactions:** No dangerous reactions known.
**Incompatible materials:** No further relevant information available.
**Hazardous decomposition:** No dangerous decomposition products known.

## 11 Toxicological information

| LD/LC50 values that are relevant for classification: | | |
|---|---|---|
| **106-97-8 n-butane** | | |
| Inhalative | LC50/4 h | 658 mg/l (rat) |
| **110-19-0 isobutyl acetate** | | |
| Oral | LD50 | 4763 mg/kg (rbt) |

**Information on toxicological effects:** No data available.
**Sensitization:** No sensitizing effects known.

**Carcinogenic categories**

| IARC (International Agency for Research on Cancer) |
|---|
| None of the ingredients is listed. |

| NTP (National Toxicology Program) |
|---|
| None of the ingredients is listed. |

| OSHA-Ca (Occupational Safety & Health Administration) |
|---|
| None of the ingredients is listed. |

## 12 Ecological information

**Aquatic toxicity:** Hazardous for water, do not empty into drains.
**Persistence and degradability:** The product is degradable after prolonged exposure to natural weathering processes.
**Bioaccumulative potential:** No further relevant information available.
**Mobility in soil:** No further relevant information available.
**Other adverse effects:** No further relevant information available.

## 13 Disposal considerations

Dispose of in accordance with local, state, and federal regulations. Do not puncture, incinerate, or compact. Partially empty cans must be disposed of responsibly. Do not heat or cut empty containers with electric or gas torches.
**Recommendation:** Completely empty cans should be recycled.

## 14 Transport information

**UN-Number** UN1950
**DOT** Aerosols, flammable
**ADR** 1950 Aerosols
**Transport hazard class(es):**
**Class** 2.1
**Marine pollutant:** No
**Special precautions for user:** Warning: Gases
**EMS Number:** F-D,S-U
**Packaging Group:** --
**UN "Model Regulation":** UN1950, Aerosols, 2.1

## 15 Regulatory information

| SARA Section 355 (extremely hazardous substances): |
|---|
| None of the ingredients in this product are listed. |

| SARA Section 313 (Specific toxic chemical listings): |
|---|
| None of the ingredients is listed. |

**CPSC:** This product complies with 16 CFR 1303 and does not contain more than 90 ppm of lead.

| California Proposition 65 chemicals known to cause cancer: | |
|---|---|
| 100-41-4 | ethyl benzene |

| EPA: | | |
|---|---|---|
| 110-19-0 | isobutyl acetate | D |

## 16 Other information

**Contact:** Regulatory Affairs

# SAFETY DATA SHEET

**Revision date** 20-May-2015 **Version** 1

## Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

**Product identifier**

**Product Code** 720A009LG.7BF1

**Product Name** GREENBAR LONG GEL

**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

**American Samoa, Guam, Northern Mariana Islands, Puerto Rico, U.S. Virgin Islands** 1-800-255-3924

## Section 2: HAZARDS IDENTIFICATION

**Classification**

| | |
|---|---|
| Skin corrosion/irritation | Category 2 |
| Serious eye damage/eye irritation | Category 2 |
| Skin sensitization | Category 1 |
| Reproductive toxicity | Category 2 |

**Label elements**



**Signal word** **WARNING**

**HAZARD STATEMENTS**
Causes skin irritation
Causes serious eye irritation
May cause an allergic skin reaction
Suspected of damaging fertility or the unborn child

**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. Wash face, hands and any exposed skin thoroughly after handling. Avoid breathing dust/fume/gas/mist/vapors/spray. Contaminated work clothing should not be allowed out of the workplace.

**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**
IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash before reuse. If skin irritation or rash 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)**
Not applicable. May form combustible dust concentrations in air.

**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-% |
|---|---|---|
| Epoxy Resin | Proprietary | 10 - 25 |
| Titanium dioxide | 13463-67-7 | 1 - 3 |
| Bisphenol A | 80-05-7 | 1 - 3 |

*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**

IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash before reuse. If skin irritation or rash 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**

Water spray (fog). Carbon dioxide (CO2). Alcohol resistant foam.

Not to be used for safety reasons: Inert gas under high pressure (e.g. CO2), 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. May cause sensitization by skin contact.

**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**

Remove all sources of ignition. Do not breathe dust. Use personal protective equipment as required. Avoid contact with skin, eyes or clothing. Keep people away from and upwind of spill/leak.

**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. Prevent further leakage or spillage if safe to do so.

**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. Do not use a dry brush as dust clouds or static can be created. Take up mechanically, placing in appropriate containers for disposal. Pick up and transfer to properly labeled containers. Contain and collect spillage with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

## Section 7: HANDLING AND STORAGE

**Precautions for safe handling**

**Advice on safe handling**
Precautions should be taken to prevent the formation of dusts in concentrations above flammable, explosive or occupational exposure limits. Operators should wear anti-static footwear and clothing and floors should be of the conducting type. Use personal protection recommended in Section 8. Comply with the health and safety at work laws. Prevent product from entering drains. 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**
Bases. Strong oxidizing agents. Acids. Amines.

## 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 |
|---|---|---|---|
| Titanium dioxide<br>13463-67-7 | TWA: 10 mg/m$^3$ | TWA: 15 mg/m$^3$ total dust | IDLH: 5000 mg/m$^3$ |

**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. Do not breathe dust.

**Individual protection measures, such as personal protective equipment**

**Eye/face protection**
Tight sealing safety goggles.

**Skin and body protection**
Wear suitable protective clothing. Care should be taken in the selection of protective clothing to ensure that inflammation and irritation of the skin at neck and wrists through contact with the powder are avoided. Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

**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** | powder |
| **Appearance** | No information available |
| **Odor** | Odorless |
| **Color** | green |
| **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** | 510 °C / 950 °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)** | 10.23 |
| **specific gravity** | 1.23 |
| **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** | Bases. Strong oxidizing agents. Acids. Amines. |
| **Hazardous Decomposition Products** | Carbon monoxide. Carbon dioxide (CO2). |

## Section 11: TOXICOLOGICAL INFORMATION

**Information on likely routes of exposure**

**Eye contact**
Causes serious eye irritation
**Skin Contact**
Causes skin irritation
May cause an allergic skin reaction

**Ingestion**
Not applicable
**Inhalation**
Not applicable

**Numerical measures of toxicity - Component Information**

| Chemical Name | Oral LD50 | Dermal LD50 | Inhalation LC50 |
|---|---|---|---|
| Epoxy Resin | - | - | - |
| Titanium dioxide 13463-67-7 | > 10000 mg/kg ( Rat ) | - | - |
| Bisphenol A 80-05-7 | = 3300 mg/kg ( Rat ) | = 3 mL/kg ( Rabbit ) | > 0.17 mg/L ( Rat ) 6 h |

**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 |
|---|---|---|---|---|
| Titanium dioxide 13463-67-7 | | Group 2B | | X |

*IARC (International Agency for Research on Cancer)*
*Group 2B - Possibly Carcinogenic to Humans.*
*OSHA (Occupational Safety and Health Administration of the US Department of Labor)*
*X - Present.*

**Skin corrosion/irritation** Causes skin irritation
**Serious eye damage/eye irritation** Causes serious eye irritation
**Skin sensitization** May cause an allergic skin reaction
**Respiratory sensitization** Not applicable
**Germ cell mutagenicity** Not applicable
**Carcinogenicity** Not applicable
**Reproductive Toxicity** Suspected of damaging fertility or the unborn child
**Specific target organ toxicity (single exposure)** Not applicable
**Specific target organ toxicity (repeated exposure)** Not applicable
**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** Not applicable
**14.6 Special Provisions**
**14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** No information available

## 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 — All components are listed or exempt from listing

### US Federal Regulations

| Chemical Name | SARA 313 - Threshold Values % | Hazardous air pollutants (HAPs) content |
|---|---|---|
| Bisphenol A<br>80-05-7<br>1 - 3 | 1 | |

**SARA 311/312 Hazard Categories**

| | |
|---|---|
| **Acute health hazard** | Yes |
| **Chronic Health Hazard** | Yes |
| **Fire hazard** | No |
| **Sudden release of pressure hazard** | No |
| **Reactive Hazard** | No |

### US State Regulations

**Rule 66 status of product**
Not photochemically reactive.

**California Proposition 65**
WARNING! This product contains a chemical known in 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 |
|---|
| Epoxy Resin |

| |
|---|
| Titanium dioxide<br>13463-67-7 |
| Bisphenol A<br>80-05-7 |

## Section 16: OTHER INFORMATION

**HMIS**

| | |
|---|---|
| **Health hazards** | 2* |
| ** = Chronic Health Hazard* | |
| **Flammability** | 1 |
| **Physical hazards** | 0 |
| **Personal Protection** | X |

**Supplier Address**

| | |
|---|---|
| Valspar Coatings | Valspar Powder Coatings |
| 10300 Claude Freeman Dr. | 13129 Harland Dr. NE |
| Charlotte, NC 28262 | Covington, GA 30014 |
| 704-548-2820 | 770-784-4140 |

**Prepared By** Product Stewardship

**Revision date** 20-May-2015

**Revision Note** No information available

**Disclaimer**

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**End of Safety Data Sheet**

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ZRC COLD GALVANIZING COMPOUND (LIQUID) MATERIAL SAFETY DATA SHEET NFPA HAZARD RATING




RECD APR 2 3 2001

## SECTION 1 - PRODUCT IDENTIFICATION

**Product Identifier:** ZRC Cold Galvanizing Compound

**Product Class:** Esterified Epoxy Based Zinc-Rich Metal Primer

**Product Identification Number (PIN):** 10001-10004

**Manufacturer's Name:** ZRC Worldwide

**Address:** 145 Enterprise Drive, Marshfield, MA 02050

**Emergency Telephone No.:** 781-319-0400 Bus. Hrs.
**Chemtrec 24 hrs.** 800-424-9300

**Date of Preparation:** July 29, 1999

## SECTION 2 - HAZARDOUS INGREDIENTS

| HAZARDOUS INGREDIENTS | % (wt) | LEL | ACGIH TLV ppm (mg/M³) | OSHA PEL ppm (mg/M³) | VP MMHG @20C |
|---|---|---|---|---|---|
| *Zinc (CAS # 7440-66-6) | 77 | na | Not Established | TWA 50 (15) (Total dust in mppcf) | na |
| Zinc Oxide (CAS # 1314-13-2) | 2 | na | TWA (fume) (5) TWA(dust) (10) STEL(fume) (10) | TWA(fume) (5) TWA(dust)(15) | na |
| Petroleum Distillates (CAS # 8052-41-3) | 12 | 0.7 | TWA 100 (525) | TWA 100 (525) | 2.0 |
| *Aromatic Petroleum Distillates (CAS # 64742-95-6) | 1.3 | 1.0 | Not Established | TWA 100 (405) | 6.0 |

*This CAS No. is subject to the reporting requirements of Section 313 of SARA Title III and of 40 CFR 372.

## SECTION 3 - PHYSICAL DATA - FIRE AND EXPLOSION DATA

**Physical State:** Liquid **Water Solubility:** Insignificant **Odor/Appearance:** Grey w/ Odor of Petroleum Distillates
**Vapor Pressure:** 6 @ 20°C **Vapor Density:** Heavier than Air **Evaporation Rate:** Slower than Ether
**Boiling Range:** 144-207 °C **Flash Point:** 111 °F SETA **Specific Gravity:** 2.88 @ 25 °C
**Percent Volatile:** 47(vol) **Weight/Gallon:** 24 Lbs. @ 25 °C. **Autoignition Temp.:** not determined
**Reactivity in Water:** See Sec.4 **VOC:** 385 g/l (3.3 lb/gal) **Flammability Limits in Air:** UEL 7% (vol) LEL 0.9% (vol)
**Flammability Classification:** DOT - Combustible Liquid / OSHA- Combustible Liquid Class II / OSHA Class 29 CFR-1910-106a
**Extinguishing Media:** Approved Class B Fire Extinguisher, foam or dry chemical. DO NOT USE WATER! Combustion in a limited amount of air can generate toxic Carbon Monoxide. Use full protective equipment and self-contained breathing apparatus for respiratory protection in fighting fires in enclosures. In a fire situation or when the material is heated, it becomes a highly flammable liquid with a moderate explosion hazard. Once ignited, this product will burn readily in air.
**Unusual Fire and Explosion Hazards:** Keep containers closed tightly. Isolate from heat, electrical equipment, sparks and open flame. Closed containers may explode when exposed to extreme heat. Zinc present in a finely divided form is hazardous when atomized in air and, if sparked, explosion is possible. Application to hot surfaces requires special precautions.
During emergency conditions, overexposure to decomposition products (gaseous oxides of Carbon and Nitrogen) may cause health hazard. Symptoms may not be immediately apparent. Obtain medical attention. Heavier than air vapors may flow along surfaces to distant ignition sources and flash back. Moisture and acid contamination can result in Hydrogen gas evolution, causing cans to bulge with increased pressure. Cans so deformed should not be moved, opened or punctured. Call (781) 319-0400. See also Sections 4 and 5.
**Special Fire Fighting Procedures:** DO NOT USE WATER IN ANY FORM.
Water may be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat, but care should be taken to prevent water access to wet paint and spray residues. See also Section 7.

## SECTION 4 - PHYSICAL HAZARDS

**Stability:** Stable **Hazardous Polymerization:** Will not occur
**Materials and Conditions to Avoid:** This material is considered to be stable under its normal handling and storage conditions. It can react violently with strong oxidizing agents such as chlorine and oxygen, as well as water, weak acids and concentrated acids. Store in dry areas away from oxidizing agents (chlorine, oxygen), all acids, alkalies and water. Avoid dusting and accumulations of spray residues.
**Hazardous Combustion Products:** Water and alkali contact will produce hydrogen with additional risks of explosion and fire. May produce fumes of zinc oxides and the oxides of carbon and nitrogen when heated to decomposition.
**Sensitivity to Impact:** Impact w/sparking may produce discharge of contents with fire or explosion hazard.
**Sensitivity to Static Discharge:** Yes. Electrically interconnect and ground containers for transfer of liquids to avoid static spark.

## SECTION 5 - HEALTH HAZARD DATA

**Threshold Limit Value:** 100 ppm **OSHA PEL:** Mixture (See Section 2)
**Routes of Entry:** Skin Contact, Skin Absorption, Eye Contact, Inhalation and Ingestion.
**Medical Conditions Generally Aggravated by Exposure:** Respiratory conditions, dermatitis and other skin afflictions, conditions of the central nervous system.
**Effects of Acute Exposure to Product:** Solvents contained in this mixture are central nervous system depressants. Symptoms of overexposure include drowsiness, dizziness, headache, slurred speech, intoxication with euphoria and/or depression leading to stupor and unconsciousness. Nose, throat and lung irritation may occur from inhalation. Skin contact may cause defatting and dermatitis. Eye contact with the liquid causes tears, burning, irritation, conjunctivitis. Ingestion will cause poisoning and may be fatal; avoid aspiration if ingested. Do not induce vomiting. Lung contact may cause chemical pneumonitis. During welding and burning operations hazardous decomposition products may be evolved from the dried film, these may include but not be limited to Zinc Oxides as well as gaseous oxides of Carbon and Nitrogen. Excessive inhalation of these fumes may produce symptoms known as "Fume Fever" and "Zinc Shakes" among other effects. Consult Physician.

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**Effects of Chronic Overexposure to Product:** Reports have associated repeated and prolonged overexposure to solvents with permanent damage to the brain and central nervous system.
**Irritancy of Product:** Eye, Skin, Nose, Throat and Lung irritant.
**Sensitization to Product:** May cause allergic skin reaction. **Carcinogenicity:** None **Teratogenicity:** None
**Mutagenicity:** None **Reproductive Toxicity:** None **Synergistic Products:** None known
**EMERGENCY AND FIRST AID PROCEDURES:**
**Inhalation:** Remove to fresh air. Keep warm and quiet. Give artificial respiration if required. Get medical assistance.
**Eyes:** Wash eyes immediately with large amounts of water for at least 15 minutes. Take to physician for medical attention.
**Skin:** Wash contact area promptly with soap and water. Promptly remove wet clothing. Consult physician if irritation persists.
**Ingestion:** Do not induce vomiting without medical advice. Contact a physician, emergency room or Poison Center immediately. Observe all rules of good hygiene during and after use. Wash thoroughly before smoking or eating.

## SECTION 6 - SPECIAL PROTECTION INFORMATION

**Personal Protective Equipment:**
**Gloves:** Neoprene gloves and aprons should be used to prevent prolonged or repeated skin contact. Use protective creams when skin contact is likely.
**Respirator:** In outdoor or open areas, wear only properly fitted, NIOSH/MSHA approved respirators capable of filtering dust particulates during and after application unless air monitoring demonstrates vapor/mist levels are below acceptable limits. In areas of restricted ventilation, wear only properly fitted, NIOSH/MSHA approved respirators designed to remove a combination of organic vapors and dust particulates during and after application unless air monitoring demonstrates vapor/mist levels are below acceptable limits. In confined areas, use approved air line type respirators or hoods. Follow respirator manufacturer's directions for respirator use.
**Eye:** Safety goggles with unperforated side shields or face shield should be used where splashing into eyes is possible. An eye wash fountain should also be available in areas where splashing is possible. When large amounts of material are used, a safety shower should be available.
**Footwear:** Wear chemical resistant boots with steel toes.
**Clothing:** Wear neoprene apron over well fitting clothes. Loose fitting clothes should not be worn. Remove and wash or discard contaminated clothing.
**Ventilation Engineering Controls:** Work place areas require exhaust ventilation in accordance with OSHA regulation 29 CFR Part 1910.107d to maintain vapor levels below the TLV (especially during spraying, misting or heating). Use an approved high efficiency respirator of the full face canister type (for limited time and concentrations), air supplied type of self-contained respirators (for extended exposures involving high or unknown vapor concentrations or for non-routine or emergency conditions). Exhaust levels should be maintained at least at 100 lfm. All ventilation equipment should be explosion-proof, and any tools used in the area should be of the non-sparking type.

## SECTION 7 – SPECIAL PRECAUTIONS - SPILL OR LEAK PROCEDURES

**Leak and Spill Procedure:** For massive spills, evacuate the area. For all spills, eliminate ignition sources. Dike and contain spills with dry, inert materials (sand, earth, etc.). Eliminate all sources of moisture and do not use water in clean-up operations. Recover as much of the free liquid as possible for disposal and use an absorbent to pick up the residue. Avoid discharging paint directly into a sewer or surface waters. Do not flush spills with water. Use non-sparking tools only. Spilled material may be slippery on floors.
**Waste Disposal:** Dispose of the absorbed material or the free waste liquid in dry containers according to Local, State and Federal regulations for Hazardous Wastes. Dispose of all materials including empty cans according to Local, State and Federal regulations. Do not incinerate. Do not flush into sewers. Containers may explode if heated even when empty. It is recommended that solid waste be landfilled only at approved hazardous disposal sites using approved contractors.
**Handling Procedures and Equipment:** Electrically interconnect and ground containers for transfer of liquids to avoid fire caused by static discharge. Use only non-sparking tools. Areas of use should have good ventilation and all sources of open flame and high heat should be excluded. Prohibit smoking in these areas. Ensure sufficient ventilation to prevent accumulation of heavy vapors in low lying areas of sumps. Material is electrically conductive. Do not apply by electrostatic spray equipment unless equipment has been designed for use with such coatings by the equipment manufacturer.
**Storage Requirements:** This combustible liquid should be stored in a cool, clean, dry, well-ventilated, fire resistant storage room or in a solvent storage cabinet that meets OSHA requirements. Store only in totally closed cans with identifying labels that indicate the flammability of the material. Store large quantities only in buildings in compliance with OSHA 1910.105. Areas of storage for this material should have good ventilation and all sources of open flame and high heat should be excluded. Prohibit smoking in these areas. Ensure sufficient ventilation to prevent accumulation of heavy vapors in low lying areas or sumps. Do not store above 40 °C. Do not puncture, drag or slide container.
**Other Precautions:** Any deformed cans should not be moved, opened or punctured. Call (781) 319-0400. Do not take internally. Keep away from children. Empty container may contain extremely flammable residues that can explode if heated.

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**PRODUCT NAME:** SCOTCHKOTE 413/215 PC
**MANUFACTURER:** 3M
**DIVISION:** Infrastructure Protection Division

**ADDRESS:** 3M Center, St. Paul, MN 55144-1000

**EMERGENCY PHONE: 1-800-364-3577 or (651) 737-6501 (24 hours)**

**Issue Date:** 02/16/12
**Supercedes Date:** 11/03/11

**Document Group:** 18-5841-4

**ID Number(s):**

80-6107-8162-9, 80-6107-8163-7, 80-6107-8164-5

**This product is a kit or a multipart product which consists of multiple, independently packaged components. An MSDS for each of these components is included. Please do not separate the component MSDSs from this cover page. The document numbers of the MSDSs for components of this product are:**

18-5028-8, 18-5041-1

Revision Changes:
Kit: Component document group number(s) was modified.
Kit: Division name was modified.
Copyright was modified.

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## SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:** SCOTCHKOTE 413/215 PC, Part A
**MANUFACTURER:** 3M
**DIVISION:** Infrastructure Protection Division

**ADDRESS:** 3M Center, St. Paul, MN 55144-1000

**EMERGENCY PHONE: 1-800-364-3577 or (651) 737-6501 (24 hours)**

**Issue Date:** 02/20/12
**Supercedes Date:** 02/03/12

**Document Group:** 18-5028-8

**Product Use:**
Intended Use: Coating
Specific Use: Part A of 2 Part Patch Material for Epoxy Coating

## SECTION 2: INGREDIENTS

| Ingredient | C.A.S. No. | % by Wt |
|---|---|---|
| DI(4-HYDROYXPHENOL) ISOPROPYLIDENE DIGLYCIDYL ETHER - DI(4-HYDROXYPHENOL) ISOPROPYLIDENE COPOLYMER | 25036-25-3 | 60 - 80 |
| 1-METHOXY-2-PROPANOL | 107-98-2 | 10 - 25 |
| 2-METHOXYMETHYLETHOXYPROPANOL | 34590-94-8 | 5 - 15 |
| XYLENE | 1330-20-7 | < 2 |
| 2,6-DIMETHYL-4-HEPTANONE | 108-83-8 | < 1.5 |
| ETHYLBENZENE | 100-41-4 | < 1.5 |
| ETHYL ALCOHOL | 64-17-5 | < 0.5 |
| METHYL ALCOHOL | 67-56-1 | < 0.25 |

## SECTION 3: HAZARDS IDENTIFICATION

### 3.1 EMERGENCY OVERVIEW

**Odor, Color, Grade:** Clear liquid. Hydrcarbon odor.
**General Physical Form:** Liquid
**Immediate health, physical, and environmental hazards:** Flammable liquid and vapor. Closed containers exposed to heat from

fire may build pressure and explode. Vapors may travel long distances along the ground or floor to an ignition source and flash back. May cause allergic skin reaction. May cause target organ effects. Contains a chemical or chemicals which can cause birth defects or other reproductive harm. Contains a chemical or chemicals which can cause cancer.

## 3.2 POTENTIAL HEALTH EFFECTS

**Eye Contact:**
Moderate Eye Irritation: Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

Dust created by cutting, grinding, sanding, or machining may cause eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

Vapors released during curing may cause eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

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

Allergic Skin Reaction (non-photo induced): Signs/symptoms may include redness, swelling, blistering, and itching.

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

Dust from cutting, grinding, sanding or machining may cause irritation of the respiratory system. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Vapors released during curing may cause irritation of the respiratory system. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

May be absorbed following inhalation and cause target organ effects.

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

May be absorbed following ingestion and cause target organ effects.

**Target Organ Effects:**
Auditory Effects: Signs/symptoms may include hearing impairment, balance dysfunction and ringing in the ears.

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

Prolonged or repeated exposure may cause:
Kidney/Bladder Effects: Signs/symptoms may include changes in urine production, abdominal or lower back pain, increased protein in urine, increased blood urea nitrogen (BUN), blood in urine, and painful urination.

Liver Effects: Signs/symptoms may include loss of appetite, weight loss, fatigue, weakness, abdominal tenderness and jaundice.

Neurological Effects: Signs/symptoms may include personality changes, lack of coordination, sensory loss, tingling or numbness of the extremities, weakness, tremors, and/or changes in blood pressure and heart rate.

Contains a chemical or chemicals which can cause birth defects or other reproductive harm.

**Carcinogenicity:**

Contains a chemical or chemicals which can cause cancer.

NOTE: This product contains ethanol. Alcoholic beverages and ethanol in alcoholic beverages have been classified as human carcinogens by the International Agency for Research on Cancer, the U.S. National Toxicology Program, and the California Environmental Protection Agency (for purposes of Proposition 65). Exposure to ethanol during the foreseeable use of this product is not expected to cause cancer.

| Ingredient | C.A.S. No. | Class Description | Regulation |
|---|---|---|---|
| ETHYL ALCOHOL | 64-17-5 | Grp. 1: Carcinogenic to humans | International Agency for Research on Cancer |
| ETHYLBENZENE | 100-41-4 | Grp. 2B: Possible human carc. | International Agency for Research on Cancer |

# SECTION 4: FIRST AID MEASURES

## 4.1 FIRST AID PROCEDURES

The following first aid recommendations are based on an assumption that appropriate personal and industrial hygiene practices are followed.

**Eye Contact:** Flush eyes with large amounts of water. If signs/symptoms persist, get medical attention.
**Skin Contact:** Remove contaminated clothing and shoes. Immediately flush skin with large amounts of water. If signs/symptoms develop, get medical attention. Wash contaminated clothing and clean shoes before reuse.
**Inhalation:** Remove person to fresh air. If signs/symptoms develop, get medical attention.
**If Swallowed:** Do not induce vomiting unless instructed to do so by medical personnel. Give victim two glasses of water. Never give anything by mouth to an unconscious person. Get medical attention.

# SECTION 5: FIRE FIGHTING MEASURES

## 5.1 FLAMMABLE PROPERTIES

| | |
|---|---|
| **Autoignition temperature** | *No Data Available* |
| **Flash Point** | 97 °F [*Test Method:* Tagliabue Closed Cup] |
| **Flammable Limits(LEL)** | 1 % volume |
| **Flammable Limits(UEL)** | 36.5 % volume |
| **OSHA Flammability Classification:** | Class IC Flammable Liquid |

## 5.2 EXTINGUISHING MEDIA

Use fire extinguishers with class B extinguishing agents (e.g., dry chemical, carbon dioxide).

## 5.3 PROTECTION OF FIRE FIGHTERS

**Special Fire Fighting Procedures:** Water may not effectively extinguish fire; however, it should be used to keep fire-exposed containers and surfaces cool and prevent explosive rupture. Wear full protective equipment (Bunker Gear) and a self-contained breathing apparatus (SCBA).

**Unusual Fire and Explosion Hazards:** Flammable liquid and vapor. Closed containers exposed to heat from fire may build pressure and explode. Vapors may travel long distances along the ground or floor to an ignition source and flash back.

**Note: See STABILITY AND REACTIVITY (SECTION 10) for hazardous combustion and thermal decomposition information.**

# SECTION 6: ACCIDENTAL RELEASE MEASURES

**6.1. Personal precautions, protective equipment and emergency procedures**
Evacuate unprotected and untrained personnel from hazard area. The spill should be cleaned up by qualified personnel. Remove all ignition sources such as flames, smoking materials, and electrical spark sources. Use only non-sparking tools. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapors, in accordance with good industrial hygiene practice. Warning! A motor could be an ignition source and could cause flammable gases or vapors in the spill area to burn or explode. Remember, adding an absorbent material does not remove a toxic, corrosivity or flammability hazard.

**6.2. Environmental precautions**
For larger spills, cover drains and build dikes to prevent entry into sewer systems or bodies of water. Collect the resulting residue containing solution. Place in a metal container approved for transportation by appropriate authorities. Dispose of collected material as soon as possible.

**Clean-up methods**
Refer to other sections of this MSDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment. Call 3M-HELPS line (1-800-364-3577) for more information on handling and managing the spill. Contain spill. Cover spill area with a fire-extinguishing foam. An aqueous film forming foam (AFFF) is recommended. Working from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material. Mix in sufficient absorbent until it appears dry. Collect as much of the spilled material as possible using non-sparking tools. Clean up residue with an appropriate solvent selected by a qualified and authorized person. Ventilate the area with fresh air. Read and follow safety precautions on the solvent label and MSDS. Seal the container.

**In the event of a release of this material, the user should determine if the release qualifies as reportable according to local, state, and federal regulations.**

# SECTION 7: HANDLING AND STORAGE

## 7.1 HANDLING
For industrial or professional use only. Keep out of the reach of children. Avoid breathing of vapors, mists or spray. Avoid skin contact. Avoid eye contact with vapors, mists, or spray. Do not eat, drink or smoke when using this product. Wash exposed areas thoroughly with soap and water. Avoid breathing of vapors created during cure cycle. Avoid breathing of dust created by cutting, sanding, grinding or machining. Avoid static discharge. Ground containers securely when transferring contents. Wear low static or properly grounded shoes. Keep away from heat, sparks, open flame, pilot lights and other sources of ignition. Avoid contact with oxidizing agents.

## 7.2 STORAGE
Keep container in well-ventilated area. Keep container tightly closed. Store away from heat. Store out of direct sunlight. Store away from acids. Store away from oxidizing agents.

# SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

## 8.1 ENGINEERING CONTROLS
Provide appropriate local exhaust ventilation on open containers. Provide local exhaust ventilation at transfer points. Provide appropriate local exhaust for cutting, grinding, sanding or machining. Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below Occupational Exposure Limits and/or control mist, vapor, or spray. If ventilation is not adequate, use respiratory protection equipment.

## 8.2 PERSONAL PROTECTIVE EQUIPMENT (PPE)

**8.2.1 Eye/Face Protection**
Avoid eye contact with vapors, mists, or spray.
The following eye protection(s) are recommended: Indirect Vented Goggles

.

**8.2.2 Skin Protection**
Avoid skin contact. Wear heat insulating gloves when handling this material to prevent thermal burns.

Select and use gloves and/or protective clothing to prevent skin contact based on the results of an exposure assessment. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible materials.
Gloves made from the following material(s) are recommended: Butyl Rubber
Polymer laminate
. The following protective clothing material(s) are recommended: Apron - polymer laminate
.

**8.2.3 Respiratory Protection**
Avoid breathing of vapors, mists or spray. Avoid breathing of vapors created during cure cycle. Avoid breathing of dust created by cutting, sanding, grinding or machining.
Select one of the following NIOSH approved respirators based on airborne concentration of contaminants and in accordance with OSHA regulations: Half facepiece or fullface air-purifying respirator with organic vapor cartridges
Half facepiece or fullface air-purifying respirator with organic vapor cartridges and N95 particulate prefilters
. Select and use respiratory protection to prevent an inhalation exposure based on the results of an exposure assessment. Consult with your respirator manufacturer for selection of appropriate types of respirators.

**8.2.4 Prevention of Swallowing**
Do not eat, drink or smoke when using this product. Wash exposed areas thoroughly with soap and water.

## 8.3 EXPOSURE GUIDELINES

| Ingredient | Authority | Type | Limit | Additional Information |
|---|---|---|---|---|
| 1-METHOXY-2-PROPANOL | ACGIH | TWA | 100 ppm | |
| 1-METHOXY-2-PROPANOL | ACGIH | STEL | 150 ppm | |
| 2,6-DIMETHYL-4-HEPTANONE | ACGIH | TWA | 25 ppm | |
| 2,6-DIMETHYL-4-HEPTANONE | OSHA | TWA | 290 mg/m3 | |
| 2-METHOXYMETHYLETHOXYPROPANOL | ACGIH | TWA | 100 ppm | Skin Notation* |
| 2-METHOXYMETHYLETHOXYPROPANOL | ACGIH | STEL | 150 ppm | Skin Notation* |
| 2-METHOXYMETHYLETHOXYPROPANOL | CMRG | TWA | 10 ppm | |
| 2-METHOXYMETHYLETHOXYPROPANOL | CMRG | STEL | 75 ppm | |
| 2-METHOXYMETHYLETHOXYPROPANOL | OSHA | TWA | 600 mg/m3 | Skin Notation* |
| ETHYL ALCOHOL | ACGIH | STEL | 1000 ppm | |
| ETHYL ALCOHOL | OSHA | TWA | 1900 mg/m3 | |
| ETHYLBENZENE | ACGIH | TWA | 20 ppm | |
| ETHYLBENZENE | CMRG | TWA | 25 ppm | |
| ETHYLBENZENE | CMRG | STEL | 75 ppm | |
| ETHYLBENZENE | OSHA | TWA | 435 mg/m3 | |
| METHYL ALCOHOL | ACGIH | TWA | 200 ppm | Skin Notation* |
| METHYL ALCOHOL | ACGIH | STEL | 250 ppm | Skin Notation* |
| METHYL ALCOHOL | OSHA | TWA | 260 mg/m3 | |
| XYLENE | ACGIH | TWA | 100 ppm | |
| XYLENE | ACGIH | STEL | 150 ppm | |
| XYLENE | CMRG | TWA | 50 ppm | |
| XYLENE | CMRG | STEL | 75 ppm | |
| XYLENE | OSHA | TWA | 435 mg/m3 | |

* Substance(s) refer to the potential contribution to the overall exposure by the cutaneous route including mucous membrane and eye, either by airborne or, more particularly, by direct contact with the substance. Vehicles can alter skin absorption.

SOURCE OF EXPOSURE LIMIT DATA:
ACGIH: American Conference of Governmental Industrial Hygienists
CMRG: Chemical Manufacturer Recommended Guideline
OSHA: Occupational Safety and Health Administration
AIHA: American Industrial Hygiene Association Workplace Environmental Exposure Level (WEEL)

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| **Odor, Color, Grade:** | Clear liquid. Hydrcarbon odor. |
| **General Physical Form:** | Liquid |
| **Autoignition temperature** | *No Data Available* |
| **Flash Point** | 97 °F [*Test Method:* Tagliabue Closed Cup] |
| **Flammable Limits(LEL)** | 1 % volume |
| **Flammable Limits(UEL)** | 36.5 % volume |
| **Boiling Point** | 148 - 356 °F |
| **Density** | 1.07 g/ml |
| **Vapor Density** | >=1 [*Ref Std:* AIR=1] |
| **Vapor Pressure** | 26 mmHg [*Test Method:* Calculated] [*Details:* @55C] |
| **Specific Gravity** | 1.07 [*Ref Std:* WATER=1] |
| **pH** | *No Data Available* |
| **Melting point** | *No Data Available* |
| **Solubility in Water** | Negligible |
| **Evaporation rate** | <=1 [*Ref Std:* BUOAC=1] |
| **Volatile Organic Compounds** | 271 g/l [*Test Method:* tested per EPA method 24] [*Details:* For coating mixture of Parts A and B] |
| **Kow - Oct/Water partition coef** | *No Data Available* |
| **Viscosity** | *No Data Available* |

## SECTION 10: STABILITY AND REACTIVITY

**Stability:** Stable.

**Materials and Conditions to Avoid:** Avoid exposure to reducing agents. Avoid all possible sources of ignition.

**10.1 Conditions to avoid**
Sparks and/or flames

**10.2 Materials to avoid**
Strong oxidizing agents
Reducing agents

**Hazardous Polymerization:** Hazardous polymerization will not occur.

### Hazardous Decomposition or By-Products

| Substance | Condition |
|---|---|
| Aldehydes | Not Specified |
| Carbon monoxide | Not Specified |

| | |
|---|---|
| Carbon dioxide | Not Specified |
| Oxides of Nitrogen | Not Specified |

## SECTION 11: TOXICOLOGICAL INFORMATION

Please contact the address listed on the first page of the MSDS for Toxicological Information on this material and/or its components.

## SECTION 12: ECOLOGICAL INFORMATION

### ECOTOXICOLOGICAL INFORMATION

Not determined.

### CHEMICAL FATE INFORMATION

Not determined.

## SECTION 13: DISPOSAL CONSIDERATIONS

**Waste Disposal Method:** Incinerate in a permitted hazardous waste incinerator. As a disposal alternative, dispose of waste product in a permitted hazardous waste facility.

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

**Since regulations vary, consult applicable regulations or authorities before disposal.**

## SECTION 14:TRANSPORT INFORMATION

**ID Number(s):**
80-6107-8168-6, 80-6300-0150-3

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

## SECTION 15: REGULATORY INFORMATION

### US FEDERAL REGULATIONS

Contact 3M for more information.

**311/312 Hazard Categories:**
Fire Hazard - Yes Pressure Hazard - No Reactivity Hazard - No Immediate Hazard - Yes Delayed Hazard - Yes

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

| Ingredient | C.A.S. No | % by Wt |
|---|---|---|
| XYLENE | 1330-20-7 | < 2 |
| ETHYLBENZENE | 100-41-4 | < 1.5 |

## STATE REGULATIONS
Contact 3M for more information.

**CALIFORNIA PROPOSITION 65**

| Ingredient | C.A.S. No. | Classification |
|---|---|---|
| ETHYLBENZENE | 100-41-4 | **Carcinogen |

** WARNING: contains a chemical which can cause cancer.

## CHEMICAL INVENTORIES
The components of this product are in compliance with the chemical notification requirements of TSCA.

Contact 3M for more information.

## INTERNATIONAL REGULATIONS
Contact 3M for more information.

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

# SECTION 16: OTHER INFORMATION

**NFPA Hazard Classification**
**Health:** 2 **Flammability:** 3 **Reactivity:** 0 **Special Hazards:** None

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

**HMIS Hazard Classification**
**Health:** 2 **Flammability:** 3 **Reactivity:** 0 **Protection:** X - See PPE section.

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

Revision Changes:
Section 1: Division name was modified.
Section 9: Property description for required properties was deleted.

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# Material Safety Data Sheet

BASF
The Chemical Company

## ZINCRICH REBAR PRIMER

Version 1.6 12/22/2006

## 1. PRODUCT AND COMPANY INFORMATION

| | | |
|---|---|---|
| Company | : | **BASF Building Systems**<br>889 Valley Park Drive<br>Shakopee, MN 55379 |
| Telephone | : | (952) 496-6000 |
| Emergency telephone number | : | (800) 424-9300<br>(703) 527-3887 (Outside Continental US) |
| Product name | : | ZINCRICH REBAR PRIMER |
| MSDS ID No. | : | 10756 |
| TSCA Inventory | : | All components of this product are included, or are exempt from inclusion, in the EPA Toxic Substances Control Act (TSCA) Chemical Substance Inventory. |
| Canadian DSL | : | All components of this product are included, or are exempt from inclusion, in the Canadian Domestic Substance List (DSL). |
| Product Use Description | : | Coating |

## 2. HAZARDOUS INGREDIENTS

| Chemical | CAS No. | TLV | STEL | PEL | CEIL | Weight % |
|---|---|---|---|---|---|---|
| ZINC | 7440-66-6 | | N.E. | N.E. | N.E. | 30.00 - 60.00 % |
| XYLENE | 1330-20-7 | 100 ppm | 150 ppm | 100 ppm | 300 ppm | 5.00 - 10.00 % |
| EPOXY RESIN | 25068-38-6 | N.E. | N.E. | N.E. | N.E. | 5.00 - 10.00 % |
| METHYL ETHYL KETONE | 78-93-3 | 200 ppm | 300 ppm | 200 ppm | N.E. | 5.00 - 10.00 % |
| ETHYLBENZENE | 100-41-4 | 100 ppm | 125 ppm | 100 ppm | N.E. | 1.00 - 5.00 % |
| ZINC OXIDE | 1314-13-2 | 5 mg/m3 | 10 mg/m3 | 5 mg/m3 | N.E. | 1.00 - 5.00 % |
| INORGANIC LEAD | 7439-92-1 | 0.05 mg/m3 | N.E. | N.E. | N.E. | 0.10 - 1.00 % |

## 3. HAZARDS IDENTIFICATION

| | HEALTH | FLAMMABILITY | PHYSICAL HAZARD |
|---|---|---|---|
| HMIS® Rating | 2* | 3 | 0 |

WHMIS Class : B2
D2B

Primary Routes of Entry :
Ingestion
Inhalation
Eye contact
Skin contact

**Effects of Overexposure**

Inhalation : Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting. Inhalation of high vapor concentrations can cause CNS-depression and narcosis. Prolonged inhalation can be harmful.

Skin : Prolonged skin contact may defat the skin and produce dermatitis. Prolonged or repeated exposure can cause skin irritation and redness. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons. May cause sensitization by skin contact.

Eyes : Can cause moderate to severe irritation, tearing and blurred vision. Prolonged exposure can result in more sever irritation and possible corneal injury.

Ingestion : Intake can cause gastrointestinal irritation, nausea, cramps, vomiting and diarrhea, headache, cyanosis and drowsiness.

Chronic exposure : Existing respiratory or skin ailments may be aggravated by exposure. Chronic overexposure to xylene can cause damage to the formed elements of blood [e.g., red cells, which carry oxygen]. This product contains ethylbenzene. The International Agency for Research on Cancer has evaluated ethylbenzene and has classified it as a possible human carcinogen (Group 2B) based on sufficient evidence for carcinogenicity in experimental animals, but inadequate evidence for cancer in exposed humans. This product contains solvents. Reports associate repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Reports also indicate that solvents cause liver damage, kidney damage, and mucous membrane irritation. Be warned that intentional misuse by deliberately inhaling the vapors and/or the product contents (a process often called "sniffing") can be harmful or fatal. This product contains inorganic lead. Prolonged overexposure to Lead can cause central nervous system damage, gastrointestinal disturbances, anemia, fatigue, sleep disturbances and weight loss. Kidney dysfunction and possible injury has also been associated with lead poisoning. IARC has listed lead as a possible human carcinogen.

**Carcinogenicity**

| | ACGIH | IARC | NTP | OSHA |
|---|---|---|---|---|
| ZINC | N.E. | N.E. | N.E. | N.E. |
| XYLENE | Not classifiable as a human carcinogen. | Classification not possible from current data. | N.E. | N.E. |
| EPOXY RESIN | N.E. | N.E. | N.E. | N.E. |
| METHYL ETHYL KETONE | N.E. | N.E. | N.E. | N.E. |
| ETHYLBENZENE | Confirmed animal carcinogen with unknown relevance to humans. | Inadequate data. | N.E. | N.E. |
| ZINC OXIDE | N.E. | N.E. | N.E. | N.E. |
| INORGANIC LEAD | Confirmed animal carcinogen with unknown relevance to humans. | Limited data. | | |

## 4. FIRST AID MEASURES

Eye contact : Flush eyes with water, lifting upper and lower lids occasionally for 15 minutes. Seek medical attention.

Skin contact : Remove contaminated clothing. Wash thoroughly with soap and water. If irritation persists seek medical attention. Wash contaminated clothing before reuse.

Ingestion : Do not induce vomiting without medical advice. If conscious, drink plenty of water. If a person feels unwell or symptoms of skin irritation appear, consult a physician. If a person vomits, place him/her in the recovery position. Never give anything by mouth to an unconscious person.

Inhalation : Remove victim from exposure. If difficulty with breathing, administer oxygen. If breathing

has stopped administer artificial respiration, preferably mouth-to-mouth. Seek immediate medical attention.

## 5. FIRE-FIGHTING MEASURES

| | | |
|---|---|---|
| Flash point | : | 39.99 °F (4.44 °C) |
| Autoignition temperature | : | no data available |
| Lower explosion limit | : | 1.0 %(V) |
| Upper explosion limit | : | 13.7 %(V) |
| Suitable extinguishing media | : | water fog<br>carbon dioxide (CO2)<br>dry chemical |
| Fire and Explosion Hazards | : | Flammable Liquid. Can release vapors that form explosive mixtures at temperatures at or above the flashpoint. 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; CONTAINERS MAY EXPLODE AND CAUSE INJURY OR DEATH. Heating can release vapours which can be ignited. Solid stream of water or foam can cause frothing. |
| Special Fire-fighting Procedures | : | Can be ignited by heat, sparks or flame. At higher temperature pressure build up in sealed containers. Use water to cool containers exposed to fire. As in any fire, wear pressure demand self-contained breathing apparatus (NIOSH approved or equivalent) and full protective gear. Water runoff can cause environmental damage. Dike and collect water used to fight fire. |

## 6. ACCIDENTAL RELEASE MEASURES

| | | |
|---|---|---|
| Methods for cleaning up | : | Ventilate the area and remove all sources of ignition. Evacuate unnecessary personnel. Take action to eliminate source of leak. Large spills should be handled carefully. Put on respiratory protection and necessary personal protective equipment. Dike or impound spilled Liquid. Contain and collect spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). |

## 7. HANDLING AND STORAGE

| | | |
|---|---|---|
| Handling | : | Keep out of reach of children. Use only in area provided with appropriate ventilation. Take precautionary measures against static discharges. Ground and bound containers when transferring material. For personal protection see section 8. |
| Storage | : | Store in a dry, well ventilated place away from sources of heat, ignition and direct sunlight. Keep container tightly closed. |

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

| | | |
|---|---|---|
| Eye protection | : | Wear as appropriate:<br>safety glasses with side-shields |

| | | |
|---|---|---|
| | | goggles<br>face-shield |
| Hand protection | : | Wear Chemically resistant gloves. |
| Body Protection | : | Wear as appropriate:<br>Chemically resistant clothes<br>preventive skin protection |
| Respiratory protection | : | In case of insufficient ventilation wear suitable respiratory equipment. When workers are facing concentrations above the exposure limit they must use NIOSH approved respirators. |
| Hygienic Practices | : | Avoid contact with skin, eyes and clothing. Ensure adequate ventilation, especially in confined areas. Wash hands before breaks and at the end of workday. When using, do not eat, drink or smoke. Handle in accordance with good industrial hygiene and safety practice. |
| Engineering Controls | : | Local exhaust ventilation can be necessary to control any air contaminants to within their TLVs during the use of this product. |

## 9. PHYSICAL AND CHEMICAL PROPERTIES

| | | |
|---|---|---|
| Color | : | gray |
| Physical State | : | liquid |
| Odor | : | solvent |
| pH | : | no data available |
| Odor Threshold | : | No information available. |
| Vapor Pressure | : | no data available |
| Vapor Density | : | Heavier than air |
| Boiling point/range | : | 174.99 - 286.00 °F (79.44 - 141.11 °C) |
| Freeze Point | : | no data available |
| Water solubility | : | no data available |
| Specific Gravity | : | 2.04 |
| Viscosity | : | no data available |
| Evaporation rate | : | Faster than Butyl acetate |
| Partition coefficient (n-octanol/water) | : | no data available |
| VOC Concentration as applied (less water and exempt solvents) | : | 581 g/l |

## 10. STABILITY AND REACTIVITY

| | | |
|---|---|---|
| Stability | : | Stable under recommended storage conditions. |
| Conditions to avoid | : | Heat, flames and sparks.<br>Direct sources of heat.<br>Strong sunlight for prolonged periods.<br>Prolonged exposure to high temperatures |
| Materials to avoid | : | strong acids<br>strong bases<br>oxidizing agents |
| Hazardous decomposition products | : | Oxides of carbon |
| Hazardous polymerization | : | Will not occur under normal conditions. |

## 11. TOXICOLOGICAL INFORMATION

**Acute inhalation toxicity**

| Product | Type | Value | Species | Exposure time |
|---|---|---|---|---|
| | LC50 | no data available | | |
| **Component** | | | | |
| ZINC | LC50 | no data available | | |
| XYLENE | LC50 | no data available | | |
| EPOXY RESIN | LC50 | no data available | | |
| METHYL ETHYL KETONE | LC50 | no data available | | |
| ETHYLBENZENE | LC50 | no data available | | |
| ZINC OXIDE | LC50 | no data available | | |
| INORGANIC LEAD | LC50 | no data available | | |

**Acute oral toxicity**

| Product | Type | Value | Species |
|---|---|---|---|
| | LD50 (Oral) | no data available | |
| **Component** | | | |
| ZINC | LD50 (Oral) | no data available | |
| XYLENE | LD50 (Oral) | 4,300 mg/kg | rat |
| EPOXY RESIN | LD50 (Oral) | no data available | |
| METHYL ETHYL KETONE | LD50 (Oral) | no data available | |
| ETHYLBENZENE | LD50 (Oral) | no data available | |
| ZINC OXIDE | LD50 (Oral) | no data available | |
| INORGANIC LEAD | LD50 (Oral) | no data available | |

**Acute dermal toxicity**

| Type | Value | Species |
|---|---|---|

| | | | |
|---|---|---|---|
| Product | LD50 (Dermal) | no data available | |
| Component | | | |
| ZINC | LD50 (Dermal) | no data available | |
| XYLENE | LD50 (Dermal) | > 1,700 mg/kg | rabbit |
| EPOXY RESIN | LD50 (Dermal) | no data available | |
| METHYL ETHYL KETONE | LD50 (Dermal) | 6,480 mg/kg | rabbit |
| ETHYLBENZENE | LD50 (Dermal) | no data available | |
| ZINC OXIDE | LD50 (Dermal) | no data available | |
| INORGANIC LEAD | LD50 (Dermal) | no data available | |

## 12. ECOLOGICAL INFORMATION

Ecotoxicological Information : There is no data available for this product.

## 13. DISPOSAL CONSIDERATIONS

Recommendations: Use excess product in an alternate beneficial application. Handle disposal of waste material in manner which complies with local, state, province and federal regulation.

## 14. TRANSPORT INFORMATION

| | | |
|---|---|---|
| DOT : | Proper shipping name | COATING SOLUTION |
| | UN-No | **1139** |
| | Class | 3 |
| | Packaging group | II |
| | Primary Label | Flammable liquid |
| IATA : | Proper shipping name | COATING SOLUTION |
| | UN-No | **1139** |
| | Class | 3 |
| | Packaging group | II |
| | Primary Label | Flammable liquid |

## 15. REGULATORY INFORMATION

**SARA 311/312 (RTK)**
This product has been reviewed according to the EPA 'Hazard Categories' promulgated under Sections 311 and 312 of the Superfund Amendments and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

FIRE HAZARD IMMEDIATE (ACUTE) HEALTH HAZARD DELAYED (CHRONIC) HEALTH HAZARD

**SARA 313**
This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:

| Weight % | CAS No. | Chemical Name |
|---|---|---|
| 30.00 - 60.00 % | 7440-66-6 | ZINC |

| | | |
|---|---|---|
| 5.00 - 10.00 % | 1330-20-7 | XYLENE |
| 5.00 - 10.00 % | 78-93-3 | METHYL ETHYL KETONE |
| 1.00 - 5.00 % | 100-41-4 | ETHYLBENZENE |
| 1.00 - 5.00 % | 1314-13-2 | ZINC OXIDE |
| 0.10 - 1.00 % | 7439-92-1 | INORGANIC LEAD |

**CERCLA**
CERCLA section 103(a) specifically requires the person in charge of a vessel or facility to report immediately to the National Response Center (NRC) a release of a hazardous substance whose amount equals or exceeds the assigned RQ. The following hazardous substances are contained in this product.

| RQ | CAS No. | Chemical Name |
|---|---|---|
| 1,000 lbs | 7440-66-6 | ZINC |
| 100 lbs | 1330-20-7 | XYLENE |
| 5,000 lbs | 78-93-3 | METHYL ETHYL KETONE |
| 1,000 lbs | 100-41-4 | ETHYLBENZENE |
| 10 lbs | 7439-92-1 | INORGANIC LEAD |

**TSCA Section 12(b) Export Notification**
This product contains the following chemical substances subject to the reporting requirements of TSCA 12(b) if exported from the United States:

| CAS No. | Chemical Name |
|---|---|
| 14567-73-8 | TREMOLITE (NON-ABESTIFORM) |
| 17068-78-9 | ANTHOPHYLLITE |

**California Proposition 65**
The chemical(s) noted below and contained in this product, are known to the state of California to cause cancer, birth defects or other reproductive harm. Unless otherwise specified in Section 2 of this MSDS, these chemicals are present at < 0.1%:

| CAS No. | Chemical Name |
|---|---|
| 100-41-4 | ETHYLBENZENE |
| 7440-43-9 | CADMIUM |
| 7439-92-1 | INORGANIC LEAD |
| 14808-60-7 | SILICA, CRYSTALLINE QUARTZ |
| 14567-73-8 | TREMOLITE (NON-ABESTIFORM) |
| 17068-78-9 | ANTHOPHYLLITE |

## 16. OTHER INFORMATION

Legend : N.E. - Not Established
TLV - Threshold Limit Value
STEL - Short Term Exposure Limit
PEL - Permissible Exposure Limit
CEIL - Ceiling

Prepared By : Environment, Health and Safety Department

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End of MSDS.

# Material Safety Data Sheet
## acc. to ISO/DIS 11014

Printing date 04/07/2008 Reviewed on 04/07/2008

## 1 Identification of substance

· **Product details**

· **Trade name: Rebar Epoxy Spray (J-62)**

· **Article number:** 83-69660
· **Application of the substance / the preparation**

· **Manufacturer/Supplier:**
Dayton Superior
4226 Kansas Avenue
Kansas City, KS 66106

Tel.: (866) 329-8724

Emergency Telephone Number: Use only in the event of an emergency involving a spill, leak, fire, exposure, or accident involving chemicals. Within the U.S., Canada, or the U.S. Virgin Islands, call ChemTrec at (800) 424-9300, 24 hours a day. Or, outside these areas, call (703) 527-3887. Collect calls are accepted.

· **Information department:** Environmental, Health, and Safety department.

## 2 Composition/Data on components

· **Chemical characterization**
· **Description:** Mixture of the substances listed below with nonhazardous additions.

| · **Dangerous components:** | | |
|---|---|---|
| 67-64-1 | acetone | 25-50% |
| 74-98-6 | propane | 10-25% |
| 106-97-8 | butane (containing ≥ 0,1 % butadiene (203-450-8)) | ≤ 10% |
| 1330-20-7 | xylene | ≤ 10% |
| 8052-41-3 | Stoddard solvent | ≤ 10% |
| 75-28-5 | isobutane (containing ≥ 0,1 % butadiene (203-450-8)) | ≤ 5% |

· **Additional information:** For the wording of the listed risk phrases refer to section 16.

## 3 Hazards identification

· **Hazard description:** May cause skin and eye irritation.
· **Information pertaining to particular dangers for man and environment:**
The product has to be labelled due to internationally acknowledged calculation procedures using the latest valid versions.
Has a narcotizing effect.
· **Classification system:**
The classification was made according to the latest editions of international substances lists, and expanded upon from company and literature data.
· **NFPA ratings (scale 0 - 4)**




Health = 2
Fire = 4
Reactivity = 1

· **HMIS-ratings (scale 0 - 4)**




Health = *2
Fire = 4
Reactivity = 1



(Contd. on page 2)

(Contd. of page 1)

## 4 First aid measures

· **After inhalation:** In case of unconsciousness place patient stably in side position for transportation.
· **After skin contact:**
Immediately wash with water and soap and rinse thoroughly.
If skin irritation continues, consult a doctor.
· **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
· **After swallowing:** Seek medical treatment.

## 5 Fire fighting measures

· **Suitable extinguishing agents:** CO2, sand, extinguishing powder. Do not use water.
· **For safety reasons unsuitable extinguishing agents:**
Water
Water with full jet
· **Protective equipment:**
Because fire may produce thermal decomposition products, wear a self-contained breathing apparatus (SCBA) with a full face piece operated in pressure-demand or positive-pressure mode.

## 6 Accidental release measures

· **Person-related safety precautions:** Wear protective equipment. Keep unprotected persons away.
· **Measures for environmental protection:**
Prevent seepage into sewage system, workpits and cellars.
Inform respective authorities in case of seepage into water course or sewage system.
· **Measures for cleaning/collecting:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
Do not flush with water or aqueous cleansing agents

## 7 Handling and storage

· **Handling:**
· **Information for safe handling:**
Wear appropriate personal protective clothing to prevent eye and skin contact. Avoid breathing vapors or mists of this product. Use with adequate ventilation. Do not take internally.
· **Information about protection against explosions and fires:**
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.

· **Storage:**
· **Requirements to be met by storerooms and receptacles:** Store in a cool location.
· **Information about storage in one common storage facility:** Not required.
· **Further information about storage conditions:**
Keep receptacle tightly sealed.
Do not gas tight seal receptacle.
Store in cool, dry conditions in well sealed receptacles.
Protect from heat and direct sunlight.



(Contd. on page 3)

(Contd. of page 2)

## 8 Exposure controls and personal protection

· **Additional information about design of technical systems:** No further data; see item 7.

· **Components with limit values that require monitoring at the workplace:**

| | |
|---|---|
| **67-64-1 acetone** | |
| PEL | 2400 mg/m³, 1000 ppm |
| REL | 590 mg/m³, 250 ppm |
| TLV | Short-term value: 1782 mg/m³, 750 ppm<br>Long-term value: 1188 mg/m³, 500 ppm<br>BEI |
| **74-98-6 propane** | |
| PEL | 1800 mg/m³, 1000 ppm |
| REL | 1800 mg/m³, 1000 ppm |
| TLV | (4508) mg/m³, (2500) ppm |
| **106-97-8 butane (containing ≥ 0,1 % butadiene (203-450-8))** | |
| REL | 1900 mg/m³, 800 ppm |
| TLV | 1900 mg/m³, 800 ppm |
| **1330-20-7 xylene** | |
| PEL | 435 mg/m³, 100 ppm |
| REL | Short-term value: 655 mg/m³, 150 ppm<br>Long-term value: 435 mg/m³, 100 ppm<br>(o-, m-, & p-isomers) |
| TLV | Short-term value: 651 mg/m³, 150 ppm<br>Long-term value: 434 mg/m³, 100 ppm<br>BEI |
| **8052-41-3 Stoddard solvent** | |
| PEL | 2900 mg/m³, 500 ppm |
| REL | Short-term value: C 1800* mg/m³<br>Long-term value: 350 mg/m³<br>*15-min |
| TLV | 525 mg/m³, 100 ppm |
| **75-28-5 isobutane (containing ≥ 0,1 % butadiene (203-450-8))** | |
| REL | 1900 mg/m³, 800 ppm |

· **Additional information:** The lists that were valid during the creation were used as basis.

· **Personal protective equipment:**
· **General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Store protective clothing separately.
Do not inhale gases / fumes / aerosols.
Avoid contact with the eyes and skin.
· **Breathing equipment:** Suitable respiratory protective device recommended.
· **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

(Contd. on page 4)

(Contd. of page 3)

· **Material of gloves**
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
· **Penetration time of glove material**
The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.
· **Eye protection:** Wear appropriate eye protection to prevent eye contact.

## 9 Physical and chemical properties

| | |
|---|---|
| · **General Information** | |
| **Form:** | Liquid |
| **Color:** | According to product specification |
| **Odor:** | Characteristic |
| · **Change in condition** | |
| **Melting point/Melting range:** | Undetermined. |
| **Boiling point/Boiling range:** | -22°C (-8°F) |
| · **Flash point:** | -19°C (-2°F) |
| · **Ignition temperature:** | 230.0°C (446°F) |
| · **Auto igniting:** | Product is not selfigniting. |
| · **Danger of explosion:** | Product is not explosive. However, formation of explosive air/vapor mixtures are possible. |
| · **Explosion limits:** | |
| **Lower:** | 1.5 Vol % |
| **Upper:** | 13.0 Vol % |
| · **Vapor pressure at 20°C (68°F):** | 8300.0 hPa (6226 mm Hg) |
| · **Density at 20°C (68°F):** | 0.700 g/cm³ |
| · **Solubility in / Miscibility with** | |
| **Water:** | Not miscible or difficult to mix. |
| · **Solvent content:** | |
| **Organic solvents:** | 73.0 % |
| · **Solids content:** | 13.0 % |
| · **Volatile Organic Compounds:** | Not determined |

## 10 Stability and reactivity

· **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
· **Dangerous reactions** No dangerous reactions known.
· **Dangerous products of decomposition:** No dangerous decomposition products known.



(Contd. on page 5)

(Contd. of page 4)

## 11 Toxicological information

· **Acute toxicity:**

| · LD/LC50 values that are relevant for classification: | | |
|---|---|---|
| 1330-20-7 xylene | | |
| Oral | LD50 | 4300 mg/kg (rat) |
| Dermal | LD50 | 2000 mg/kg (rabbit) |

· **Primary irritant effect:**
· **on the skin:** May cause skin irritation.
· **on the eye:** Irritating effect.
· **Sensitization:** No sensitizing effects known.
· **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Irritant
Carcinogenic.

## 12 Ecological information

· **General notes:**
Water hazard class 3 (Self-assessment): extremely hazardous for water
Do not allow product to reach ground water, water course or sewage system, even in small quantities.

## 13 Disposal considerations

· **Product:**
· **Recommendation:**
Must not be disposed of as normal garbage. Do not allow product to reach sewage system.
It is the generator's responsibility to determine if the waste meets applicable definitions of hazardous waste. State and local regulations may differ from federal disposal regulations. Dispose of waste material according to local, state, federal, and provincial environmental regulations.

· **Uncleaned packagings:**
· **Recommendation:** Disposal must be made according to Federal, State, and Local regulations.

## 14 Transport information

· **DOT regulations:**



| | |
|---|---|
| · **Hazard class:** | 3 |
| · **Identification number:** | UN1268 |
| · **Packing group:** | I |
| · **Proper shipping name (technical name):** | PETROLEUM DISTILLATES, N.O.S. |
| · **Label** | 3 |
| · **Limited Quantity Exemption:** | Limited Quantity applies for packages 0.1 gallons or smaller (per part). |
| · **U.S. Domestic Ground Shipments:** | Same as listed for Standard Shipments above. |
| · **U.S. Domestic Ground Non-Bulk (119 gal or less per container) Shipments:** | Same as listed for Standard Shipments above. |

(Contd. on page 6)

(Contd. of page 5)

| | |
|---|---|
| · **Emergency Response Guide (ERG) Number:** | Not determine |

· **Land transport ADR/RID (cross-border):**



| | |
|---|---|
| · **ADR/RID class:** | 3 Flammable liquids |
| · **Danger code (Kemler):** | 33 |
| · **UN-Number:** | 1268 |
| · **Packaging group:** | I |
| · **Description of goods:** | 1268 PETROLEUM DISTILLATES, N.O.S. |

· **Maritime transport IMDG:**



| | |
|---|---|
| · **IMDG Class:** | 3 |
| · **UN Number:** | 1268 |
| · **Label** | 3 |
| · **Packaging group:** | I |
| · **EMS Number:** | F-E,S-E |
| · **Marine pollutant:** | No |
| · **Propper shipping name:** | PETROLEUM DISTILLATES, N.O.S. |

· **Air transport ICAO-TI and IATA-DGR:**



| | |
|---|---|
| · **ICAO/IATA Class:** | 3 |
| · **UN/ID Number:** | 1268 |
| · **Label** | 3 |
| · **Packaging group:** | I |
| · **Propper shipping name:** | PETROLEUM DISTILLATES, N.O.S. |

## 15 Regulations

· **Sara**

· **Section 355 (extremely hazardous substances):**

None of the ingredient is listed.

· **Section 313 (Specific toxic chemical listings):**
This product may contain 1 or more toxic chemicals subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR part 372. If so, the chemicals are listed below.

| | | |
|---|---|---|
| 1330-20-7 | xylene | ≤10% |

· **TSCA (Toxic Substances Control Act):**

All ingredients are listed.

(Contd. on page 7)

USA

(Contd. of page 6)

· **Proposition 65**

· **Chemicals known to the State of California (Prop. 65) to cause cancer:**
None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for females:**
None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**
None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**
None of the ingredients is listed.

· **Cancerogenity categories**

· **EPA (Environmental Protection Agency)**

| | | |
|---|---|---|
| 67-64-1 | acetone | D |
| 1330-20-7 | xylene | D |

· **IARC (International Agency for Research on Cancer)**

| | | |
|---|---|---|
| 1330-20-7 | xylene | 3 |

· **NTP (National Toxicology Program)**
None of the ingredients is listed.

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

| | | |
|---|---|---|
| 67-64-1 | acetone | A4 |
| 1330-20-7 | xylene | A4 |

· **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.

· **OSHA-Ca (Occupational Safety & Health Administration)**
None of the ingredients is listed.

· **Product related hazard informations:**
The product has been classified and marked in accordance with directives on hazardous materials.

· **Hazard symbols:**
T Toxic
F+ Extremely flammable

· **Hazard-determining components of labelling:** Stoddard solvent

· **Risk phrases:**
45 May cause cancer.
12 Extremely flammable.
36/37/38 Irritating to eyes, respiratory system and skin.
67 Vapours may cause drowsiness and dizziness.

(Contd. on page 8)

(Contd. of page 7)

· **Safety phrases:**
2 Keep out of the reach of children.
3 Keep in a cool place.
9 Keep container in a well-ventilated place.
13 Keep away from food, drink and animal feedingstuffs.
16 Keep away from sources of ignition - No smoking.
20 When using do not eat or drink.
23 Do not breathe fumes/aerosol.
24/25 Avoid contact with skin and eyes.
26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
28 After contact with skin, wash immediately with plenty of soap and water.
29/56 Do not empty into drains, dispose of this material and its container at hazardous or special waste collection point.
36/39 Wear suitable protective clothing and eye/face protection.
43 In case of fire, use sand, carbon dioxide or powdered extinguishing agent. Never use water.
45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
52 Not recommended for interior use on large surface areas.
64 If swallowed, rinse mouth with water (only if the person is conscious).

· **Special labeling of certain preparations:**
Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50°C, i.e. electric lights. Do not pierce or burn, even after use.
Do not spray on a naked flame or any incandescent material. Keep away from sources of ignition - No smoking.

· **National regulations:**

· **Water hazard class:** Water hazard class 3 (Self-assessment): extremely hazardous for water.

## 16 Other information

The provided information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.
This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Department issuing MSDS:** Environmental, Health & Safety Department
· **Contact:** Environmental, Health & Safety Manager

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

### 1.1. Product identifier

Product form : Substance

Trade name : Silica Sand, All Grades

CAS No. : 14808-60-7

MSDS Number : BLC00006

Product group : Commercial product

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

Use of the substance/preparation : Sand for specialty applications
Prohibited for use in sandblasting.

### 1.3. Details of the supplier of the safety data sheet

Black Lab LLC
11730 Ravenna Road
Chardon, OH 44024
USA
T 800-258-3878 (Customer Service)

customerservice@blacklabcorp.com

www.blacklabcorp.com

### 1.4. Emergency telephone number

Emergency number : 800-258-3878
8:00 AM to 5:00 PM CST
Monday through Friday

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

**GHS-US classification**

Carc. 1A H350
STOT SE 3 H335
STOT RE 1 H372

Full text of H-phrases: see section 16

### 2.2. Label elements

**GHS-US labelling**

Hazard pictograms (GHS-US) :



GHS07 GHS08

Signal word (GHS-US) : Danger

Hazard statements (GHS-US) : H335 - May cause respiratory irritation
H350 - May cause cancer (inhalation)

H372 - Causes damage to organs (lung/respiratory system) through prolonged or repeated exposure (inhalation)

Precautionary statements (GHS-US) : P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing
P312 - Call a POISON CENTER/doctor if you feel unwell
P308+P313 - IF exposed or concerned: Get medical advice/attention
P314 - Get medical advice and attention if you feel unwell

P264 - Wash hands and forearms thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P280 - Wear eye protection, protective clothing, protective gloves
P260 - Do not breathe dust
P271 - Use only outdoors or in a well-ventilated area

P403+P233 - Store in a well-ventilated place. Keep container tightly closed
P405 - Store locked up

P501 - Dispose of contents/container according to local, regional, national, and international regulations

### 2.3. Other hazards

No additional information available

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

| Name | Product identifier | % | GHS-US classification |
|---|---|---|---|
| Quartz | (CAS No.) 14808-60-7 | 99 - 100 | Carc. 1A, H350<br>STOT SE 3, H335<br>STOT RE 1, H372 |

Full text of H-phrases: see section 16

### 3.2. Mixtures

Not applicable

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

First-aid measures general : If medical advice is needed, have product container or label at hand.

First-aid measures after inhalation : If inhaled, remove to fresh air and keep at rest in a position comfortable for breathing. Obtain medical attention if breathing difficulty persists.

First-aid measures after skin contact : Rinse immediately with plenty of water. Gently wash with plenty of soap and water. Obtain medical attention if irritation persists.

First-aid measures after eye contact : Immediately rinse with water for a prolonged period while holding the eyelids wide open. Seek medical attention if material is embedded in eye. If eye irritation persists: Get medical advice and attention.

First-aid measures after ingestion : If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.

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

Symptoms/injuries : Repeated or prolonged inhalation may damage lungs.

Symptoms/injuries after inhalation : May cause irritation to the respiratory tract, sneezing, coughing, burning sensation of throat with constricting sensation of the larynx and difficulty in breathing.

Symptoms/injuries after skin contact : Prolonged contact with large amounts of dust may cause mechanical irritation. Dust may cause irritation in skin folds or by contact in combination with tight clothing.

Symptoms/injuries after eye contact : Redness, pain.

Symptoms/injuries after ingestion : Abdominal pain.

Chronic symptoms : Respiratory difficulties. May cause cancer.

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

Unsuitable extinguishing media : None known.

### 5.2. Special hazards arising from the substance or mixture

Fire hazard : Not flammable.

Explosion hazard : No particular fire or explosion hazard.

Reactivity : Hazardous reactions will not occur under normal conditions.

### 5.3. Advice for firefighters

Precautionary measures fire : Fight fire with normal precautions from a reasonable distance.

Firefighting instructions : Not flammable.

Protection during firefighting : Use normal individual fire protective equipment.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

General measures : Do not breathe dust. Avoid generation of dust during clean-up of spills. Recover the product by vacuuming, shovelling or sweeping. Vacuum must be fitted with HEPA filter to prevent release of particulates during clean-up.

#### 6.1.1. For non-emergency personnel

Protective equipment : Wear suitable protective clothing, gloves and eye/face protection. Use recommended respiratory protection.

Emergency procedures : Collect as any solid.

#### 6.1.2. For emergency responders

No additional information available

### 6.2. Environmental precautions

No additional information available

### 6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Avoid generation of dust during clean-up of spills. Recover the product by vacuuming, shovelling or sweeping. Vacuum must be fitted with HEPA filter to prevent release of particulates during clean-up.

### 6.4. Reference to other sections

No additional information available

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Additional hazards when processed : Do not breathe dust.

Precautions for safe handling : Avoid creating or spreading dust.

Hygiene measures : Handle in accordance with good industrial hygiene and safety procedures. Always wash your hands immediately after handling this product, and once again before leaving the workplace. Do not eat, drink or smoke in areas where product is used.

### 7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store in a dry, cool place. Keep container tightly closed.

Incompatible materials : In finely divided state: reacts with (strong) oxidizers such as: hydrofluoric acid, chlorine trifluoride, oxygen difluoride, fluorine.

Storage area : Store in dry, cool area.

Special rules on packaging : Keep container closed when not in use.

### 7.3. Specific end use(s)

Sand for specialty applications

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

| **Quartz (14808-60-7)** | | |
|---|---|---|
| USA ACGIH | ACGIH TWA (mg/m³) | 0.025 mg/m³ |
| USA IDLH | US IDLH (mg/m$^3$) | 50 mg/m³ |
| USA NIOSH | NIOSH REL (TWA) (mg/m$^3$) | 0.05 mg/m³ |
| USA OSHA | OSHA PEL (TWA) (mg/m$^3$)<br>(Mineral Dust) | (30)/(% $SiO_2$ + 2) mg/m³ - total dust<br>(10)/(% $SiO_2$ + 2) mg/m³ - respirable fraction |

### 8.2. Exposure controls

Appropriate engineering controls : Ensure adequate ventilation, especially in confined areas. Avoid dust production.

Personal protective equipment : In case of dust production: dustproof clothing. In case of dust production: protective goggles. Insufficient ventilation: wear respiratory protection. High dust production: self-contained breathing apparatus.



Hand protection : Impermeable protective gloves.

Eye protection : Protective goggles.

| | |
|---|---|
| Skin and body protection | : Handle in accordance with good industrial hygiene and safety practice. Always wash your hands immediately after handling this product, and once again before leaving the workplace. Wear suitable protective clothing. Wash contaminated clothing before reuse. |
| Respiratory protection | : Use NIOSH-approved air-purifying or supplied-air respirator where airborne concentrations of dust are expected to exceed exposure limits. |
| Consumer exposure controls | : Do not breathe dust. Wear recommended personal protective equipment. |

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

| | |
|---|---|
| Physical state | : Solid |
| Appearance | : Crystalline solid |
| Colour | : Natural colour |
| Odour | : Odourless |
| Odour threshold | : No data available |
| pH | : No data available |
| Relative evaporation rate (butylacetate=1) | : No data available |
| Melting point | : 1710 °C (3110 °F) |
| Freezing point | : No data available |
| Boiling point | : 2230 °C (4046 °F) |
| Flash point | : No data available |
| Self ignition temperature | : No data available |
| Decomposition temperature | : No data available |
| Flammability (solid, gas) | : No data available |
| Vapour pressure | : No data available |
| Relative vapour density at 20 °C | : No data available |
| Relative density | : No data available |
| Density | : 2.65 (approximately) |
| Solubility | : Water: Insoluble |
| Log Pow | : No data available |
| Log Kow | : No data available |
| Viscosity | : No data available |
| Explosive properties | : None known. |
| Oxidising properties | : None known. |
| Explosive limits | : No data available |

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Hazardous reactions will not occur under normal conditions.

### 10.2. Chemical stability

Stable under normal temperture and pressure.

### 10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

### 10.4. Conditions to avoid

None known.

### 10.5. Incompatible materials

Avoid strong oxidizers.

### 10.6. Hazardous decomposition products

Quartz (silica) will dissolve in hydroflouric acid producing a corrosive gas, silicon tetrafluoride.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity : Not classified

Skin corrosion/irritation : Not classified

Serious eye damage/irritation : Not classified

Respiratory or skin sensitisation : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : May cause cancer (inhalation).

| **Quartz (14808-60-7)** | |
|---|---|
| IARC group | Group 1 |
| National Toxicity Program (NTP) Status | Known Human Carcinogen |

Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : May cause respiratory irritation.

Specific target organ toxicity (repeated exposure) : Causes damage to organs (lung/respiratory system) through prolonged or repeated exposure (inhalation).

| **Silica Sand, All Grades (14808-60-7)** | |
|---|---|
| Additional information | Repeated or prolonged exposure to respirable crystalline silica dust will cause lung damage in the form of silicosis. Symptoms will include progressively more difficult breathing, cough, fever, and weight loss. Acute silicosis can be fatal. |

Aspiration hazard : Not classified

## SECTION 12: Ecological information

### 12.1. Toxicity

No additional information available

### 12.2. Persistence and degradability

| Silica Sand, All Grades (14808-60-7) | |
|---|---|
| Persistence and degradability | Not readily biodegradable. |

### 12.3. Bioaccumulative potential

| Silica Sand, All Grades (14808-60-7) | |
|---|---|
| Bioaccumulative potential | Not expected to bioaccumulate. |

### 12.4. Mobility in soil

No additional information available

### 12.5. Other adverse effects

No additional information available

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Regional legislation (waste) : Disposal must be done according to official regulations.

Waste disposal recommendations : Non hazardous waste.

## SECTION 14: Transport information

In accordance with DOT / TDG / ADR / RID / ADNR / IMDG / ICAO / IATA

### 14.1. UN number

No dangerous good in sense of transport regulations.

### 14.2. UN proper shipping name

Not applicable

### 14.2 Additional information

Other information : No supplementary information available.

### Overland transport

No additional information available

### Transport by sea

No additional information available

### Air transport

No additional information available

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

| Silica Sand, All Grades (14808-60-7) | |
|---|---|
| SARA Section 311/312 Hazard Classes | Immediate (acute) health hazard<br>Delayed (chronic) health hazard |

| Quartz (14808-60-7) |
|---|
| Listed on the United States TSCA (Toxic Substances Control Act) inventory |

### 15.2. International regulations

**CANADA**

| **Quartz (14808-60-7)** | |
|---|---|
| Listed on the Canadian DSL (Domestic Sustances List) inventory. | |
| WHMIS Classification | Class D Division 2 Subdivision A - Very toxic material causing other toxic effects |

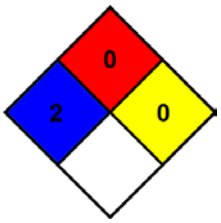
### 15.2.2. National regulations

| **Quartz (14808-60-7)** |
|---|
| Listed on IARC (International Agency for Research on Cancer)<br>Listed as carcinogen on NTP (National Toxicology Program) |

## 15.3. US State regulations

| **Quartz (14808-60-7)** |
|---|
| U.S. - California - Proposition 65 – Carcinogen<br>**WARNING!** This product contains Quartz, a substance known to the State of California to cause cancer. |
| U.S. - Hawaii - Occupational Exposure Limits - TWAs<br>U.S. - Idaho - Non-Carcinogenic Toxic Air Pollutants - Acceptable Ambient Concentrations<br>U.S. - Idaho - Non-Carcinogenic Toxic Air Pollutants - Emission Levels (ELs)<br>U.S. - Idaho - Occupational Exposure Limits - Mineral Dusts<br>U.S. - Illinois - Toxic Air Contaminant Carcinogens<br>U.S. - Maine - Chemicals of High Concern<br>U.S. - Massachusetts - Right To Know List<br>U.S. - Michigan - Occupational Exposure Limits - TWAs<br>U.S. - Minnesota - Chemicals of High Concern<br>U.S. - Minnesota - Hazardous Substance List<br>U.S. - Minnesota - Permissible Exposure Limits - TWAs<br>U.S. - New Hampshire - Regulated Toxic Air Pollutants - Ambient Air Levels (AALs) - 24-Hour<br>U.S. - New Hampshire - Regulated Toxic Air Pollutants - Ambient Air Levels (AALs) - Annual<br>U.S. - New Jersey - Right to Know Hazardous Substance List<br>U.S. - New Jersey - Special Health Hazards Substances List<br>U.S. - Oregon - Permissible Exposure Limits - Mineral Dusts<br>U.S. - Pennsylvania - RTK (Right to Know) List<br>U.S. - Tennessee - Occupational Exposure Limits - TWAs<br>U.S. - Texas - Effects Screening Levels - Long Term<br>U.S. - Texas - Effects Screening Levels - Short Term<br>U.S. - Vermont - Permissible Exposure Limits - TWAs<br>U.S. - Washington - Permissible Exposure Limits - STELs<br>U.S. - Washington - Permissible Exposure Limits - TWAs |

## SECTION 16: Other information




NFPA health hazard : 2 - Intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical attention is given.

NFPA fire hazard : 0 - Materials that will not burn.

NFPA reactivity : 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.

**HMIS III Rating**

Health : 2* Moderate Hazard - Temporary or minor injury may occur

Flammability : 0 Minimal Hazard

Physical : 0 Minimal Hazard

Personal Protection : E

Full text of H- phrases:

| | |
|---|---|
| Carc. 1A | Carcinogenicity Category 1A |
| STOT RE 1 | Specific target organ toxicity (repeated exposure) Category 1 |
| STOT SE 3 | Specific target organ toxicity (single exposure) Category 3 |
| H335 | May cause respiratory irritation |
| H350 | May cause cancer |
| H372 | Causes damage to organs through prolonged or repeated exposure |

SDS US (GHS HazCom 2012)

*The above information is believed to be accurate based on the most current data available and current as of the date of this Safety Data Sheet, and is offered in good faith. Black Lab Corp. makes no warranty, either expressed or implied, with respect to such information, and assumes no liability resulting from its use. Since the use of this information and of these opinions and the conditions of the use of the product are not within the control of Black Lab Corp., it is the user's obligation to determine the conditions of safe use of the product and the suitability of each product or product combination for their own purposes. Black Lab Corp. shall not be liable for claims, losses or damages of any third party or for lost profits or incidental or consequential damages.*

# MATERIAL SAFETY DATA SHEET

(Complies with 29 CFR 1910.1200)

## SECTION I - GENERAL

Reed Minerals, Harsco Corporation
P.O. Box 0515
Camp Hill, PA 17001-0515
regulated.
**Emergency Telephone Number**
(717) 763-4200

**Product Name:** Black Beauty® Abrasives
**CAS Number:** 68476-96-0
Particles not otherwise
**Common Name:** Slag, Coal
**Date:** February, 1998

## SECTION II - INGREDIENTS

| | | OSHA *PEL | ACGIH *TLV |
|---|---|---|---|
| Slag, Coal 99% - 100% | **Nuisance Particulate** | | |
| | **Total Particulate** | 15 | 10 |
| | **Respirable Particulate** | 5 | 3 |

* Values expressed as $mg/m^3$

## SECTION III - PHYSICAL DATA

**Physical Form:** Solid (angular granules)
**Boiling Temperature:** N/A
**Melting Temperature:** Greater than 2300°F
**Vapor Pressure/Density:** N/A
**Evaporation Rate:** N/A
**Specific Gravity:** 2.7 g/cc (typical)
**Water Solubility:** Negligible
**Color:** Black
**Odor:** None

## SECTION IV - FIRE AND EXPLOSION DATA

Product is non-flammable and non-explosive.

## SECTION V - REACTIVITY DATA

Product is stable under normal conditions of use, storage, and transportation.

## SECTION VI - HEALTH HAZARD DATA

Low health risk by inhalation. Treat as a nuisance dust. Typical free silica less than 0.1%. This material is not a recognized carcinogen or co-carcinogen. Human toxic response has not been demonstrated for any route of entry. Mechanical irritation may occur to eyes, skin or respiratory tract. Pre-existing health conditions may be aggravated.

**Carcinogenicity:** NTP - No; IARC Monographs - No; OSHA Regulated - No

## FIRST AID

IN CASE OF:
1. Eye contact - Immediately flush eyes thoroughly with water or an ophthalmic saline solution.
2. Skin contact - Wash skin with soap and water if irritation occurs.
3. Inhalation - Remove affected person(s) to fresh air source.
4. Oral intake - Rinse mouth out with water.

If symptoms persist, contact a physician or other medical personnel.

## SECTION VII - SPILL, LEAK AND DISPOSAL PROCEDURES

No special procedures required for clean-up. Wetting with water will reduce any airborne dust. Uncontaminated product does not exceed Toxicity Characteristic Leaching Procedure (TCLP) limits and may be disposed of as an inert material in an appropriate solid waste landfill according to applicable Federal, State and Local regulations.

## SECTION VIII - CONTROL MEASURES

Use appropriate NIOSH certified respiratory protection when exposure limits may be exceeded. Maintain sufficient ventilation to allow visual contact with work surfaces. Appropriate abrasive blaster's protective equipment is required, which may also include gloves, hood with protective lens, safety glasses, and hearing protection.

## SECTION IX - SPECIAL PRECAUTIONS

Keep product dry and free of all contamination to assure free flow. Use an appropriate safety screen over fill hatch of blasting pot. Respirable dusts may be generated during pressure abrasive cleaning operations.

*- NOTE-*

The opinions expressed herein are those of qualified experts within Harsco Corporation. Harsco believes that the information contained herein is current and accurate for the normal and intended use of this product as of the date of this Material Safety Data Sheet. Since the use of this information and of those opinions or the conditions of use of the product are not within the control of Harsco Corporation, it is the user's obligation to determine and observe the conditions of safe use and disposal of the product by their operations.

(RM 6/98)

Reed Minerals, Harsco Corporation
P.O. Box 0515
Camp Hill, PA 17001-0515
Telephone (717) 763-4200 Fax (717) 763-6496

**A**ggregates, **B**uilding, and **C**ommitment. . .**REED MINERALS**

Kol-Tar Inc.

P.O. Box 115
870 Adams Street
Abington, MA 02351

MSDS No. 001.1
Date: 4/4/01
Replaces: Initial Issue
Prepared by PRI Asphalt Technologies, Inc

# MATERIAL SAFETY DATA SHEET

## SECTION 1. MATERIAL IDENTIFICATION AND INFORMATION

Common Name (used on label): KT-355 SAND MIX

Chemical Name: Coal Tar, inorganic filler and water emulsion. CAS Number: N/A, a complex mixture

Product Appearance and Odor: A brown to dark brown consistency coal tar emulsion with a coal tar pitch odor when completely stirred. Cures to a black color.

Emergency Telephone Number: 8:00 a.m. - 5:00 p.m. EST (800) 642-0571 MSDS Code No.: 001.1

## SECTION 2. COMPOSITION AND INGREDIENT

| COMPONENTS (CHEMICAL & COMMON NAME) | CAS NO. | ACGIH TLV | APPROXIMATE WT% CONCENTRATION |
|---|---|---|---|
| RT-12 Emulsion Tar, including: | 65996-93-2 | 0.2 mg/m³** | less than 35% |
| Acenaphthene | 83-32-9 | NE | NE |
| Acenaphthylene | 208-96-8 | NE | NE |
| Anthracene | 120-12-7 | 0.2/mg/m³** | NE |
| Benzo(a)anthracene | 56-55-3 | A2 | NE |
| Benzo(a)pyrene | 50-32-8 | A2 | NE |
| Benzo(b)fluoranthene | 205-99-2 | A2 | NE |
| Benzo(g,h,i)perylene | 191-24-2 | NE | NE |
| Benzo(k)fluoranthene | 207-08-9 | NE | NE |
| Carbazole | 86-74-8 | NE | NE |
| Chrysene | 218-01-9 | A2 | NE |
| Dibenz(a,h)anthracene | 53-70-3 | NE | NE |
| Dibenzofuran | 132-64-9 | NE | NE |
| Fluoranthene | 206-44-0 | NE | NE |
| Fluorene | 86-73 7 | NE | NE |
| Indene | 95-13-6 | 10 ppm | NE |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | NE | NE |
| 1-Methylnaphthalene | 90-12-0 | NE | NE |
| 2-Methylnaphthalene | 91-57-6 | NE | NE |
| Naphthalene | 91-20-3 | 10 ppm | NE |
| Phenanthrene | 85-01-8 | 0 2 mg/m³** | NE |
| Pyrene | 129-00-0 | 0.2mg/m³** | NE |
| Hydrous Aluminum Silicate | 1332-58-7 | 10 mg/m³ (dust)* | less than 20% |
| Quartz | 14808-60-7 | 0.1 mg/m³ (dust)* | less than 7% |
| Titanium Dioxide | 13463-67-7 | 0.1 mg/m³ (dust)* | less than 1% |
| Aromatic Hydrocarbon | 64742-94-5 | not established | less than 1% |

* As respirable dust ** Coal Tar Pitch volatiles (Benzene soluble fraction) NE = Not Established

## SECTION 3. HEALTH AND HAZARD IDENTIFICATION

Hazardous Materials Identification System: (HMIS Rating) Health-2 Flammability-1 Reactivity-0

Emergency Overview: A dark brown to black liquid. Can cause headache, respiratory difficulty and/or irritation to skin, eyes and respiratory system. If inhaled, leave area to breath fresh air. Avoid further overexposure. If symptoms persist, GET MEDICAL ATTENTION IMMEDIATELY.

Variability Among Individuals: Health studies have shown that individual sensitivities vary from person to person. As a precaution, exposure to vapors, liquids, mists, or fumes should be minimized. Some individuals are more susceptible than others to skin disorders. Fair-haired, light-complexion persons are more apt to be affected than dark-haired, dark-skinned people.

Effects of Overexposure: (Signs and symptoms of exposure) Chronic overexposure (as defined by OSHA standards) may cause cancer. Harmful if inhaled or swallowed. Causes eye and skin irritation.

Nature of Hazard and Toxicity Information: Liquid can cause skin irritation and dermatitis, including acne. Coal tar is a phytotoxic substance, which in the presence of ultraviolet (sunlight), can cause a skin reaction similar to an exaggerated sunburn, frequently causing blisters.

Inhalation: Mist or vapor can irritate respiratory tract. Prolonged exposure to airborne concentrations significantly beyond workplace exposure limits, can cause respiratory difficulty, convulsions, and possible cardiovascular collapse.

Eye Exposure: Vapor and liquid can irritate eyes. Repeated or prolonged exposure may cause eye damage. Mineral matter liquid product may cause mechanical irritation

Skin Exposure: Coal Tar Pitch - causes skin irritation characterized by skin itching, burning, swelling, and redness. Photosensitization of the skin may occur. This irritation has a burning sensation somewhat like a sunburn and is accentuated by sunlight. Repeated or prolonged contact may contribute to conditions such as dermatitis, tar warts, and rough skin.

Ingestion: May cause gastrointestinal irritation, or distress if swallowed.

Delayed Effects: Long-term exposure to coal tar over many years in the absence of recommended hygiene practices can cause changes in skin pigmentation, benign skin growths, or skin cancer. Additionally, inhalation of vapors over a period of several years may present a lung, kidney, or bladder cancer hazard.

Coal tar, benzo(a)pyrene, and mineral oils containing polycyclic aromatic hydrocarbons have been determined by NTP and IARC to be human carcinogens.

Crystalline quartz contained in this product is totally encapsulated and does not present a respirable dust hazard. Crystalline quartz in respirable form may cause delayed (chronic) lung injury (silicosis). Silicosis is a form of disabling pulmonary fibrosis which can be progressive and may lead to death.

IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Humans (volume 42, 1987) concludes that there is sufficient evidence for the carcinogenicity of crystalline silica to experimental animals, and that there is limited evidence of the carcinogenicity of crystalline silica to humans. IARC Class 2A.

Pre-existing Medical Conditions Which May be Aggravated by Exposure:
Persons with history of diseases in the liver, skin, eye, respiratory system, blood forming organs or with bleeding abnormalities or exposure to material harmful to these systems are at greater risk than normal risk of developing adverse health effects when working with this product.

## SECTION 4. PRIMARY ROUTES OF ENTRY AND EMERGENCY FIRST-AID PROCEDURES

Eye Contact: Coal Tar - Vapors and liquid may cause irritation to the eyes. If eye contact occurs, flush with water or mineral oil for at least 15 minutes and SEEK MEDICAL ATTENTION. Inorganic particulates, quartz, etc., may cause mechanical irritation

Skin: Coal Tar - Exposure causes skin irritation characterized by skin itching, burning, swelling, and redness. Photosensitization of the skin may occur. This irritation has a burning sensation somewhat like a sunburn and is accentuated by sunlight. Repeated or prolonged contact may contribute to conditions such as dermatitis, tar warts, and rough skin. If contact occurs, wash affected area with waterless hand cleaner or vegetable oil. Remove contaminated clothing/shoes and do not reuse until thoroughly laundered. Hydrocortisone cream may be used for relief of skin irritation. If irritation persists, SEEK MEDICAL ATTENTION.

Inhalation: Coal Tar - Acute effects caused from overexposure may include coughing, sneezing, and swollen or irritated nasal mucosa and sinuses. Repeated and/or prolonged contact to high concentration may result in toxic effects, such as respiratory difficulties, convulsions, and possible cardiovascular collapse may occur. If inhaled, removed to fresh air. If not breathing, give artificial respiration or oxygen as needed. SEEK MEDICAL ATTENTION.

Ingestion: Coal Tar - May cause gastrointestinal tract irritation followed by nausea and vomiting, abdominal discomfort, rapid pulse, etc. In extreme cases, cardiovascular collapse may occur. If ingested, DO NOT INDUCE VOMITING. Give water or clear liquids. Consult local Poison Control Center, IMMEDIATELY!

Delayed Effects: Long-term overexposure to coal tar pitch can affect skin pigmentation. It can cause growths on the skin or skin cancer. It may cause cancer of the lungs, kidneys, and bladder.

Carcinogen Determination: Coal tar pitch as been determined by IARC to be a human carcinogen. Coal tar pitch and several of its specific ingredients, including benzo(a) pyrene, have been determined by NTP to cause cancer in experimental animals.

## SECTION 5. FIRE-FIGHTING MEASURES

Flash Point: (Minimum) 385°F TOC (Coal Tar Pitch) ASTM D 3143 Autoignition Temperature: Not established

National Fire Protection Association (NFPA) - Hazard Identification: Health-2 Flammability-1 Reactivity-0

Handling Precautions: Keep containers tightly closed, cool and dry. Store in properly-ventilated area. Keep away from sources of heat and flame.

Flammable or Explosive Limits: (Approximate percent by volume in air) Lower (LEL): not established Upper (UEL): not established

Extinguishing Media and Fire Fighting Procedure: Extinguish with dry chemical, $CO_2$, or sand. Universal type foam and water fog are effective. Water may be used to keep fire-exposed containers cool. FIREMAN should wear self-contained breathing apparatus and full protective clothing should be worn when fumes and/or smoke are present. A complete soap and water shower should be taken. Scott Air Pack should be available.

Decomposition Products Under Fire Conditions: Can include oxides of nitrogen, carbon, and possibly sulfur.

"Empty" Container Warning: Dispose of in an environmentally safe manner and in accordance with governmental regulations. "Empty" containers retain 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, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLORE AND CAUSE INJURY OR DEATH. Do not attempt to clean since residue is difficult to remove. For work on tanks, refer to OSHA regulation ANSI Z49.1 and other governmental and industrial references pertaining to cleaning, repairing, welding, or other contemplated operations.

## SECTION 6. ACCIDENTAL RELEASE MEASURE

Steps to be taken if spilled or released:

- Shut off and eliminate all ignition sources
- Keep people away
- Recover free product; add sand, earth, or other suitable absorbents
- Avoid breathing vapors and contact with skin and eyes
- Ventilate confined spaces; open all windows and doors
- Keep product out of sewers and water courses by diking or impounding
- Advise authorities if product has entered or may enter sewers, water courses or extensive land areas
- ASSURE CONFORMITY WITH APPLICABLE GOVERNMENTAL REGULATIONS

## SECTION 7. HANDLING AND STORAGE

Handling and Storage Precautions: Store in closed container. Prevent inhalation of vapor, ingestion, and contact with skin and eyes. Keep container closed when not in use. Change soiled work clothes frequently. Clean hands thoroughly after handling. To prevent gases, vapors, or fumes from migrating into occupied sections of the building, closed or cover all openings including windows, doors, and air intakes during and after application until gases, vapors or fumes dissipate. Precautions also apply to emptied containers.

## SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Ventilation: Ventilation should be adequate. Maintain vapor and/or particulate levels below the applicable exposure limits for coal tar pitch volatiles. If outdoors, fly upwind whenever practical to do so.

Respiratory Protection: Use NIOSH/MSHA approved respirator when TLV is exceeded.

Protective Gloves: Use chemical resistant gloves, if needed, to avoid prolonged or repeated skin contact.

Eye Protection: Wear chemical splash goggles (ANSI Z87.1) or safety glasses when working, pouring or transferring this material. DO NOT WEAR CONTACT LENSES IN THE PRESENCE OF THIS MATERIAL UNLESS SPLASH GOGGLES ARE WORN.

Skin Protection: Irritation of the skin and sunburn reactions in handling coal tar products can usually be alleviated or prevented by the use of protective creams and sunscreen agents. Protective or "barrier creams" form a film that acts both as a chemical and physical "barrier" between the skin and the contaminant and tends to resist penetration of the contaminant into the pores of the skin. In applying "barrier" creams, be sure the skin is clean and dry. Sunscreen agents filter out most of the ultra-violet rays from the sun.

A suggested application is to use a high protection sunscreen (sun protection factor 15 or greater) such as Coppertone Super Shade Lotion applied to clean skin and allowed to dry (5 minutes). This sunscreen blocks out most ultra-violet lengths of the sun's rays. Ultra-violet rays are emitted throughout the day and evening, regardless of cloud cover. Next, a protective barrier cream such as Ply-9, which is solvent resistant and water soluble (for easier clean up) should be applied. This cream will occlude the skin pores and form a "barrier" so that the chemicals cannot penetrate. Creams that are not solvent resistant such as Jergins SBS44, West Chemical's 411, or MSA's FEND should be avoided. Repeat applications each time after washing or after rough work which would remove the protective film by abrasion. To remove, wash skin with warm water and mild soap. One of the advantages of protective creams is that it makes it easier to clean tars, oils, etc., of the skin.

Other Protective Equipment: Use chemical resistant apron or other impervious clothing, if needed, to avoid contaminating regular clothing which could result in prolonged or repeated skin contact. Wear clothing closed at the neck, long-sleeved shirt, pants, and impermeable shoes. Contaminated gloves, clothing, etc., should be removed immediately and cleaned.

Work Practices/Engineering Controls: Keep containers closed when not in use. DO NOT STORE NEAR HEAT, SPARKS, FLAME OR STRONG OXIDANTS.

Personal Hygiene: Minimize breathing vapor or mist. Avoid prolonged or repeated contact with skin. Remove contaminated clothing; launder or dry clean before reuse. Remove contaminated shoes and thoroughly clean and dry before reuse. Cleanse skin thoroughly after contact, before breaks and meals, and at end of work period. Product is readily removed from skin by waterless hand cleaners, vegetable oil, followed by washing thoroughly with soap and water. Reapply barrier cream as appropriate.

## SECTION 9. PHYSICAL DATA

The following are approximate or typical values and should not be used for precise design purposes. Product is an emulsion, contains water.

Boiling Range: 212°F (BP (ASTM D 86)

Vapor Pressure: Approximately 0 mm Hg @ 70°F - estimated

Specific Gravity: Greater than 1.00

Vapor Density: Greater than 1.0 (air = 1.0)

Molecular Weight: N/A
complex mixture of hydrocarbons

Percent Volatile by Volume: Less than 50

pH: 7.0 - 8.0

Solubility in Water @ 1 ATM and 77°F: miscible

Viscosity: A medium consistency greater than 5,000 cps @ 77°F when completely stirred.

## SECTION 10. STABILITY AND REACTIVITY

Stability: _____ unstable ___X___ stable

Hazardous Polymerization: _____ may occur ___X___ will not occur

Hazardous Decomposition Products: Decomposition is not expected from normal handling. Combustion products can include oxides of nitrogen, carbon, and possibly sulfur.

Incompatibility (Material to Avoid): None known

Conditions to Avoid: Keep from heat, sparks, open flame.

## SECTION 11. TOXICOLOGICAL INFORMATION (refer to Section 3)

## SECTION 12. ECOLOGICAL INFORMATION

This material may cause harm to animals, plants, or fish.

## SECTION 13. DISPOSAL CONSIDERATIONS

Containers: Empty containers may contain residue that could burn or cause to rupture violently if heated or ignited - observe all MSDS and label precautions. DO NOT WELD on or apply heat or flame to container. Prevent unauthorized use of containers. Follow all applicable federal, state, and local regulations in disposing of container.

Waste Disposal: Dispose of waste at a permitted facility in accordance with federal, state, and local regulations.

## SECTION 14. TRANSPORTATION DATA

Transportation Incident Information: For further information relative to spills resulting from transportation incidents, refer to latest Department of Transportation Guidebook for Hazardous Materials Incidents, DOT P 5800.3.

DOT Shipping Name(s): Not regulated
UN/NA Number: N/A
Packing Group: None
Special Provisions: N/A
Non-bulk Packaging: N/A
EPA Hazardous Substances: benzo(b)fluoranthene, tar pitch, benzo(a)pyrene
Quantity Limitations: N/A
Freight Description:

Hazard Class or Division: N/A
DOT Label: Hazardous
Packaging Exceptions: None
Bulk Packaging: N/A
RQ: 100 lbs.
Marine Pollutants:
Hazardous Material Shipping Description:
ERG Number: N/A

OSHA REQUIRED LABEL INFORMATION: In compliance with hazard and right-to-know requirements, the following OSHA Hazard Warnings should be found on a label, bill of lading, or invoice accompanying this product. WARNING! CONTAINS COAL TAR PITCH. Note: product label will contain additional non-OSHA information.

## SECTION 15. REGULATORY INFORMATION

Reportable Quantity (RQ), EPA Regulation 40 CFR 300: (CERCLA 302 & 304):

| Substance | Weight Percent | RQ (lbs.) |
|---|---|---|
| Anthracene | 0.23 | 5,000 |
| Naphthalene | 0.08 | 100 |
| Benzo(a)pyrene | 0.20 | 1 |
| Pyrene | 0.17 | 5,000 |
| Chrysene | 0.21 | 100 |
| Acenaphthene | 0.13 | 100 |
| Benzo(a)anthracene | 0.22 | 1 |
| Benzo(b&k)fluoranthene | 0.42 | 1 |
| Benzo(g,h,i)perylene | 0.12 | 5,000 |
| Benzo(a,h)anthracene | 0.06 | 1 |
| Dibenzofuran | 0.05 | 1 |
| Fluorene | 0.15 | 5,000 |
| Fluoranthene | 0.21 | 1 |
| Indeno(1,2,3,c,d)pyrene | 0.11 | 1 |
| Phenanthrene | 0.57 | 5,000 |
| Pyrene | 0.17 | 5,000 |

Note: THIS INFORMATION REQUIRED FOR EMERGENCY RESPONSE REPORTING.

Extremely Hazardous Substance(s) Threshold Planning Quantity (TPQ), EPA Regulation 40 CFR 355: (SARA Section 302.

| Substance | Weight Percent | TPQ (lbs.) | RQ (lbs.) |
|---|---|---|---|
| Pyrene | 1.3 max. | 10,000 | 5,000 |

Toxic Chemical Release Reporting, EPA Regulation 40 CFR 372: (SARA Section 313):

| Substance | Weight Percent | CAS No. |
|---|---|---|
| Polycyclic Aromatic Compound Category | 0.7 max. | None. |

EPA Hazard Classification Code: (SARA Sections 311 & 312):

| Acute Hazard | Chronic Hazard | Fire Hazard | Pressure Hazard | Reactive Hazard | Not Applicable |
|---|---|---|---|---|---|
| XXX | XXX | | | | |

## SECTION 16. OTHER

The information and recommendations contained herein are to the best of KOL-TAR'S knowledge and belief, accurate and reliable as of the date issued. KOL-TAR, INC. does not warrant or guarantee their accuracy or reliability, and KOL-TAR, INC. shall not be liable for any loss or damage arising out of the use thereof.

The information and recommendations are offered for the user's consideration and examination, and it is the user's responsibility to satisfy itself that they are suitable and complete for its particular use. It is also the user's responsibility to make certain that is it relying upon the most recent, updated, information and recommendations available from KOL-TAR, INC.

The Accidental Release Measure included under Section 6 hereof, as well as the Hazardous Material Identification System (HMIS) and National Fire Protection Association (NFPA) ratings have been included by KOL-TAR, INC. in order to provide additional health and hazard classification information. The ratings recommended are based upon the criteria supplied by the developers of these rating systems, together with KOL-TAR, INC.'S interpretation of the available data.

For other product information, contact:

KOL-TAR, INC.
P.O. BOX 115
899 ADAMS STREET
NORTH ABINGTON, MA 02351

TELEPHONE: (800) 842-0571 FAX: (781) 982-9382

KOL-TAR QUALITY MAINTENANCE PRODUCTS

# U. S. SILICA COMPANY

## MSDS - MATERIAL SAFETY DATA SHEET

## SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Product Names/Trade Names**:

Silica Sand sold under various names: ASTM TESTING SANDS • GLASS SAND • FLINT SILICA • DM-SERIES • F-SERIES • FOUNDRY SANDS • FJ-SERIES • FP-SERIES • H-SERIES • L-SERIES • N-SERIES • NJ-SERIES • OK-SERIES • P-SERIES • T-SERIES • HYDRAULIC FRACING SANDS • MIN-U-SIL® Ground Silica• MYSTIC WHITE® • #1 DRY • #1 SPECIAL • PENN SAND® • Q-ROK® • SIL-CO-SIL® Ground Silica • SUPERSIL® • MASON SAND • GS-SERIES • PER-SPEC

**Synonyms/Common Names:** Sand, Silica Sand, Quartz, Crystalline Silica, Flint, Ground Silica.

**Manufacturer's Name:**
U. S. Silica Company
P. O. Box 187
Berkeley Springs, WV 25411

**Emergency Telephone Number**: 304-258-2500 (8:30 am to 5:00 pm eastern)
304-258-8295 (fax)

**Date Prepared**: June 30, 2006 (revising February 10, 2005)

## SECTION 2 - HAZARD IDENTIFICATION

**EMERGENCY OVERVIEW:**

The U. S. Silica Company material is a white or tan sand, or ground sand. It is not flammable, combustible or explosive. It does not cause burns or severe skin or eye irritation. A single exposure will not result in serious adverse health effects. Crystalline silica (quartz) is not known to be an environmental hazard.

Crystalline silica (quartz) is incompatible with hydrofluoric acid, fluorine, chlorine trifluoride or oxygen difluoride.

**OSHA REGULATORY STATUS**

This material is considered hazardous under the OSHA Hazard Communications Standard (29 CFR 1910.1200).

**POTENTIAL HEALTH EFFECTS**:

**Inhalation:**

a. Silicosis — Respirable crystalline silica (quartz) can cause silicosis, a fibrosis (scarring) of the lungs. Silicosis may be progressive; it may lead to disability and death.

b. Lung Cancer — Crystalline silica (quartz) inhaled from occupational sources is classified as carcinogenic to humans.

c. Tuberculosis — Silicosis increases the risk of tuberculosis.

d. Autoimmune and Chronic Kidney Diseases — Some studies show excess numbers of cases of scleroderma, connective tissue disorders, lupus, rheumatoid arthritis, chronic kidney diseases and end-stage kidney disease in workers exposed to respirable crystalline silica.

e. Non-Malignant Respiratory Diseases (other than silicosis) — Some studies show an increased incidence in chronic bronchitis and emphysema in workers exposed to respirable crystalline silica.

**Eye Contact**: Crystalline silica (quartz) may cause abrasion of the cornea.

**Skin Contact**: Not applicable.

**Ingestion:** Not applicable.

**Chronic Effects**: The adverse health effects -- silicosis, lung cancer, autoimmune and chronic kidney diseases, tuberculosis, and non-malignant respiratory diseases-- are chronic effects.

**Signs and Symptoms of Exposure**: Generally, there are no signs or symptoms of exposure to crystalline silica (quartz).

**Medical Conditions Generally Aggravated by Exposure**: The condition of individuals with lung disease (e.g., bronchitis, emphysema, chronic obstructive pulmonary disease) can be aggravated by exposure.

See Section 11, Toxicological Information, for additional detail on potential adverse health effects.

## SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

**Ingredients:**

| | Chemical Formula | Typical %, By Weight | CAS # |
|---|---|---|---|
| Crystalline Silica (quartz) | $SiO_2$ | 99.0 - 99.9 | 14808-60-7 |
| Aluminum Oxide | $Al_2O_3$ | < .8 | 1344-28-1 |
| Iron Oxide | $Fe_2O_3$ | < .1 | 1309-37-1 |
| Titanium Oxide | $TiO_2$ | < .1 | 13463-67-7 |

## SECTION 4 - FIRST AID MEASURES

**Inhalation**: No specific first-aid is necessary since the adverse health effects associated with exposure to crystalline silica (quartz) result from chronic exposures. If there is a gross inhalation of crystalline silica (quartz), remove the person immediately to fresh air, give artificial respiration as needed, seek medical attention as needed.

**Eye Contact**: Wash immediately with water. If irritation persists, seek medical attention.

**Skin Contact**: Not applicable.

**Ingestion**: Not applicable.

## SECTION 5 - FIRE FIGHTING MEASURES

Crystalline silica (quartz) is not flammable, combustible or explosive.

## SECTION 6 - ACCIDENTAL RELEASE MEASURES

**Spills**: Use dustless methods (vacuum) and place into closable container for disposal, or flush with water. Do not dry sweep. Wear protective equipment specified below.

**Waste Disposal Method**: See Section 13.

## SECTION 7 - HANDLING AND STORAGE

**Precautions During Handling and Use**: Do not breathe dust. Use adequate ventilation and dust collection. Keep airborne dust concentrations below permissible exposure limit ("PEL"). Do not rely on your sight to determine if dust is in the air. Respirable crystalline silica dust may be in the air without a visible dust cloud.

If crystalline silica dust cannot be kept below permissible limits, wear a respirator approved for silica dust when using, handling, storing or disposing of this product or bag. See Section 8 for further information on respirators. Practice good housekeeping. Do not permit dust to collect on walls, floors, sills, ledges, machinery, or equipment. Maintain, clean, and fit test respirators in accordance with OSHA regulations. Maintain and test ventilation and dust collection equipment. Wash or vacuum clothing that has become dusty.

The OSHA Hazard Communication Standard, 29 CFR Sections 1910.1200, 1915.1200, 1917.28, 1918.90, 1926.59 and 1928.21, and state and local worker or community "right-to-know" laws and regulations should be strictly followed.

## Do not use U. S. Silica Company materials for sandblasting.

**Precautions During Storage**: Avoid breakage of bagged material or spills of bulk material. Use dustless methods (vacuum) and place into closable container for disposal, or flush with water. Do not dry sweep. See control measures in Section 8.

The OSHA Hazard Communication Standard, 29 CFR Sections 1910.1200, 1915.1200, 1917.28, 1918.90, 1926.59 and 1928.21, and state and local worker or community "right-to-know" laws and regulations should be strictly followed. WARN YOUR EMPLOYEES (AND YOUR CUSTOMERS IN CASE OF RESALE) BY POSTING AND OTHER MEANS OF THE HAZARDS AND THE REQUIRED OSHA PRECAUTIONS. PROVIDE TRAINING FOR YOUR EMPLOYEES ABOUT THE OSHA PRECAUTIONS.

For additional precautions, see American Society for Testing and Materials (ASTM) standard practice E 1132-99a, "Standard Practice for Health Requirements Relating to Occupational Exposure to Respirable Crystalline Silica."

## SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION

**Local Exhaust Ventilation**: Use sufficient local exhaust ventilation to reduce the level of respirable crystalline silica to below the OSHA PEL. See ACGIH "Industrial Ventilation, A Manual of Recommended Practice" (latest edition).

**Respiratory Protection**:

If it is not possible to reduce airborne exposure levels to below the OSHA PEL with ventilation, use the table below to assist you in selecting respirators that will reduce personal exposures to below the OSHA PEL. This table is part of the NIOSH Respirator Selection Logic, 2004, Chapter III, Table 1, "Particulate Respirators". The full document can be found at www.cdc.gov/niosh/npptl/topics/respirators; the user of this MSDS is directed to that site for information concerning respirator selection and use.

The assigned protection factor (APF) is the minimum anticipated level of protection provided by each type of respirator worn in accordance with an adequate respiratory protection program. For example, an APF of 10 means that the respirator should reduce the airborne concentration of a particulate by a factor of 10, so that if the workplace concentration of a particulate was 150 ug/m$^3$, then a respirator with an APF of 10 should reduce the concentration of particulate to 15 ug/m$^3$.

| Assigned protection factor [1] | Type of Respirator (Use only NIOSH-certified respirators) |
|---|---|
| 10 | Any air-purifying elastomeric half-mask respirator equipped with appropriate type of particulate filter. [2]<br>Appropriate filtering facepiece respirator. [2,3]<br>Any air-purifying full facepiece respirator equipped with appropriate type of particulate filter. [2]<br>Any negative pressure (demand) supplied-air respirator equipped with a half-mask. |
| 25 | Any powered air-purifying respirator equipped with a hood or helmet and a high efficiency (HEPA) filter.<br>Any continuous flow supplied-air respirator equipped with a hood or helmet. |
| 50 | Any air-purifying full facepiece respirator equipped with N-100, R-100, or P-100 filter(s).<br>Any powered air-purifying respirator equipped with a tight-fitting facepiece (half or full facepiece) and a high-efficiency filter.<br>Any negative pressure (demand) supplied-air respirator equipped with a full facepiece.<br>Any continuous flow supplied-air respirator equipped with a tight-fitting facepiece (half or full facepiece).<br>Any negative pressure (demand) self-contained respirator equipped with a full facepiece. |
| 1,000 | Any pressure-demand supplied-air respirator equipped with a half-mask. |

1. The protection offered by a given respirator is contingent upon (1) the respirator user adhering to complete program requirements (such as the ones required by OSHA in 29CFR1910.134), (2) the use of NIOSH-certified respirators in their approved configuration, and (3) individual fit testing to rule out those respirators that cannot achieve a good fit on individual workers.
2. Appropriate means that the filter medium will provide protection against the particulate in question.
3. An APF of 10 can only be achieved if the respirator is qualitatively or quantitatively fit tested on individual workers.

**Exposure Guidelines**:

| Component | CAS No. | Percentage (by wt.) | OSHA PEL | | ACGIH TLV | | NIOSH REL | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | TWA | STEL | TWA | STEL | TWA | STEL | Unit |
| Crystalline Silica (quartz) | 14808-60-7 | 99.0-99.9 | $\frac{10}{\%\ SiO_2+2}$ | None | .025 | None | .05 | None | $mg/m^3$ |

If crystalline silica (quartz) is heated to more than 870°C, it can change to a form of crystalline silica known as trydimite; if crystalline silica (quartz) is heated to more than 1470°C, it can change to a form of crystalline silica known as cristobalite. The OSHA PEL for crystalline silica as trydimite or cristobalite is one-half of the OSHA PEL for crystalline silica (quartz).

## SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|---|---|---|---|
| **Appearance:** | White or tan sand; granular, crushed, or ground. | | |
| **Boiling Point:** | 4046°F/2230°C | **Odor:** | None |
| **Vapor Pressure (mm Hg.):** | None | **Specific Gravity (Water = 1):** | 2.65 |
| **Vapor Density (Air = 1):** | None | **Melting Point:** | 3110°F/1710°C |
| **Solubility in Water:** | Insoluble in water | **Evaporation Rate (Butyl Acetate = 1):** | None |

## SECTION 10 - STABILITY AND REACTIVITY

**Stability**: Crystalline silica (quartz) is stable.

**Incompatibility (Materials to Avoid)**: Contact with powerful oxidizing agents, such as fluorine, chlorine trifluoride and oxygen difluoride, may cause fires.

**Hazardous Decomposition or Byproducts**: Silica will dissolve in hydrofluoric acid and produce a corrosive gas - silicon tetrafluoride.

**Hazardous Polymerization**: Will not occur.

## SECTION 11 - TOXICOLOGICAL INFORMATION

The method of exposure to crystalline silica that can lead to the adverse health effects described below is inhalation.

### A. SILICOSIS

The major concern is silicosis, caused by the inhalation and retention of respirable crystalline silica dust. Silicosis can exist in several forms, chronic (or ordinary), accelerated, or acute.

Chronic or Ordinary Silicosis (often referred to as Simple Silicosis) is the most common form of silicosis, and can occur after many years of exposure to relatively low levels of airborne respirable crystalline silica dust. It is further defined as either simple or complicated silicosis.

Simple silicosis is characterized by lung lesions (shown as radiographic opacities) less than 1 centimeter in diameter, primarily in the upper lung zones. Often, simple silicosis is not associated with symptoms, detectable changes in lung function or disability.

Simple silicosis may be progressive and may develop into complicated silicosis or progressive massive fibrosis (PMF). Complicated silicosis or PMF is characterized by lung lesions (shown as radiographic opacities) greater than 1 centimeter in diameter. Although there may be no symptoms associated with complicated silicosis or PMF, the symptoms, if present, are shortness of breath, wheezing, cough and sputum production. Complicated silicosis or PMF may be associated with decreased lung function and may be disabling. Advanced complicated silicosis or PMF may lead to death. Advanced complicated silicosis or PMF can result in heart disease secondary to the lung disease (cor pumonale).

Accelerated Silicosis can occur with exposure to high concentrations of respirable crystalline silica over a relatively short period; the lung lesions can appear within five (5) years of initial exposure. Progression can be rapid. Accelerated silicosis is similar to chronic or ordinary silicosis, except that lung lesions appear earlier and progression is more rapid.

Acute Silicosis can occur with exposures to very high concentrations of respirable crystalline silica over a very short time period, sometimes as short as a few months. The symptoms of acute silicosis include progressive shortness of breath, fever, cough and weight loss. Acute silicosis is fatal.

### B. CANCER

IARC - The International Agency for Research on Cancer ("IARC") concluded that there was "*sufficient evidence* in humans for the carcinogenicity of crystalline silica in the forms of quartz or cristobalite from occupational sources", and that there is "*sufficient evidence* in experimental animals for the carcinogenicity of quartz and cristobalite." The overall IARC evaluation was that "crystalline silica inhaled in the form of quartz or cristobalite from occupational sources is *carcinogenic to humans* (*Group 1*)." The IARC evaluation noted that "carcinogenicity was not detected in all industrial circumstances studies. Carcinogenicity may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity or distribution of its polymorphs." For further information on the IARC evaluation, see IARC Monographs on the Evaluation of Carcinogenic Risks to Humans, Volume 68, "Silica, Some Silicates..." (1997).

NTP - The National Toxicology Program's Eleventh Annual Report on Carcinogens classifies "silica, crystalline (respirable size)" as a known human carcinogen.

OSHA - Crystalline silica (quartz) is not regulated by the U. S. Occupational Safety and Health Administration as a carcinogen.

### C. AUTOIMMUNE DISEASES

Several studies have reported excess cases of several autoimmune disorders, -- scleroderma, systemic lupus erythematosus, rheumatoid arthritis -- among silica-exposed workers. For a review of the subject, the following may be consulted: "Occupational Exposure to Crystalline Silica and Autoimmune Disease", Environmental Health Perspectives, Volume 107, Supplement 5, pp. 793-802 (1999); "Occupational Scleroderma", Current Opinion in Rheumatology, Volume 11, pp. 490-494 (1999).

### D. TUBERCULOSIS

Individuals with silicosis are at increased risk to develop pulmonary tuberculosis, if exposed to persons with tuberculosis. The following may be consulted for further information: Occupational Lung Disorders, Third Edition, Chapter 12, entitled "Silicosis and Related Diseases", Parkes, W. Raymond (1994); "Risk of pulmonary tuberculosis relative to silicosis and exposure to silica dust in South African gold miners," Occup Environ Med., Volume 55, pp.496-502 (1998).

### E. KIDNEY DISEASE

Several studies have reported excess cases of kidney diseases, including end stage renal disease, among silica-exposed workers. For additional information on the subject, the following may be consulted: "Kidney Disease and Silicosis", Nephron, Volume 85, pp. 14-19 (2000).

### F. NON-MALIGNANT RESPIRATORY DISEASES

The reader is referred to Section 3.5 of the NIOSH Special Hazard Review cited below, for information concerning the association between exposure to crystalline silica and chronic bronchitis, emphysema and small airways disease. There are studies that disclose an association between dusts found in various mining occupations and non-malignant respiratory diseases, particularly among smokers. It is unclear whether the observed associations exist only with underlying silicosis, only among smokers, or result from exposure to mineral dusts generally (independent of the presence or absence of crystalline silica, or the level of crystalline silica in the dust).

Sources of information:

The *NIOSH Hazard Review - Occupational Effects of Occupational Exposure to Respirable Crystalline Silica* published in April 2002 summarizes and discusses the medical and epidemiological literature on the health risks and diseases associated with occupation exposures to respirable crystalline silica. The *NIOSH Hazard Review* should be consulted for additional information, and citations to published studies on health risks and diseases associated with occupational exposure to respirable crystalline silica. The *NIOSH Hazard Review* is available from NIOSH - Publications Dissemination, 4676 Columbia Parkway, Cincinnati, OH 45226, or by calling 1-800-35-NIOSH (1-800-356-4676), or through the NIOSH web site, www.cdc.gov/niosh/topics/silica, then click on the link "NIOSH Hazard Review: Health Effects of Occupational Exposure to Respirable Crystalline Silica".

## SECTION 12 - ECOLOGICAL INFORMATION

Crystalline silica (quartz) is not known to be ecotoxic; i.e., there are no data that suggests that crystalline silica (quartz) is toxic to birds, fish, invertebrates, microorganisms or plant

## SECTION 13 - DISPOSAL CONSIDERATIONS

General: The packaging and material may be landfilled; however, material should be covered to minimize generation of airborne dust.

RCRA: Crystalline silica (quartz) is not classified as a hazardous waste under the Resource Conservation and Recovery Act, or its regulations, 40 CFR §261 et seq.

The above applies to materials as sold by U. S. Silica Company. The material may be contaminated during use, and it is the responsibility of the user to assess the appropriate disposal of the used material.

## SECTION 14 - TRANSPORT INFORMATION

Crystalline silica (quartz) is not a hazardous material for purposes of transportation under the U. S. Department of Transportation Table of Hazardous Materials, 49 CFR §172.101.

## SECTION 15 - REGULATORY INFORMATION

### UNITED STATES (FEDERAL AND STATE)

TSCA No.: Crystalline silica (quartz) appears on the EPA TSCA inventory under the CAS No. 14808-60-7.

RCRA: Crystalline silica (quartz) is not classified as a hazardous waste under the Resource Conservation and Recovery Act, or its regulations, 40 CFR §261 et seq.

CERCLA: Crystalline silica (quartz) is not classified as a hazardous substance under regulations of the Comprehensive Environmental Response Compensation and Liability Act (CERCLA), 40 CFR §302.

Emergency Planning and Community Right to Know Act (SARA Title III): Crystalline silica (quartz) is not an extremely hazardous substance under Section 302 and is not a toxic chemical subject to the requirements of Section 313.

Clean Air Act: Crystalline silica (quartz) mined and processed by U.S. Silica Company is not processed with or does not contain any Class I or Class II ozone depleting substances.

FDA: Silica is included in the list of substances that may be included in coatings used in food contact surfaces, 21 CFR §175.300(b)(3)(xxvi).

NTP: Respirable crystalline silica, primarily quartz dusts occurring in industrial and occupational settings, is classified as Known to be a Human Carcinogen.

OSHA Carcinogen: Crystalline silica (quartz) is not listed.

California Proposition 65: Crystalline silica (airborne particles of respirable size) is classified as a substance known to the State of California to be a carcinogen.

California Inhalation Reference Exposure Level (REL): California established a chronic REL of 3 ug for silica (crystalline, respirable). A chronic REL is an airborne level of a substance at or below which no adverse health effects are anticipated in individuals indefinitely exposed to the substance at that level.

Massachusetts Toxic Use Reduction Act: Silica, crystalline (respirable size, <10 microns) is "toxic" for purposes of the Massachusetts Toxic Use Reduction Act.

Pennsylvania Worker and Community Right to Know Act: Quartz is a hazardous substance under the Act, but it is not a special hazardous substance or an environmental hazardous substance.

### CANADA

Domestic Substances List: U. S. Silica Company products, as naturally occurring substances, are on the Canadian DSL.

WHMIS Classification: D2A

### OTHER

EINECS No.: 238-878-4

EEC Label (Risk/Safety Phrases): R 48/20, R 40/20, S22, S38

IARC: Crystalline silica (quartz) is classified in IARC Group 1.

Japan MITI: All of the components of this product are existing chemical substances as defined in the Chemical Substance Control Law.

Australian Inventory of Chemical Substances: All of the components of this product are listed on the AICS inventory or exempt from notification requirements.

**National, state, provincial or local emergency planning, community right-to-know or other laws, regulations or ordinances may be applicable--consult applicable national, state, provincial or local laws.**

## SECTION 16 - OTHER INFORMATION

**Hazardous Material Information System (HMIS):**

| | |
|---|---|
| Health | * |
| Flammability | 0 |
| Reactivity | 0 |
| Protective Equipment | E |

* For further information on health effects, see Sections 2 and 11 of this MSDS.

**National Fire Protection Association (NFPA):**

| | |
|---|---|
| Health | 0 |
| Flammability | 0 |
| Reactivity | 0 |

**Web Sites with Information about Effects of Crystalline Silica Exposure:**

The U. S. Silica web site will provide updated links to OSHA and NIOSH web sites addressing crystalline silica issues. www.u-s-silica.com, click in "Information", then click on "Health & Safety".

### U. S. SILICA COMPANY DISCLAIMER

**The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, express or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects that may be caused by purchase, resale, use or exposure to our silica. Customers-users of silica must comply with all applicable health and safety laws, regulations, and orders, including the OSHA Hazard Communication Standard.**

## 1. Identification

| | | |
|---|---|---|
| Product name | : | Sika Boom® |
| Supplier | : | Sika Corporation |
| Address | : | 201 Polito Avenue<br>Lyndhurst, NJ 07071<br>USA<br>www.sikausa.com |
| Telephone | : | (201) 933-8800 |
| Telefax | : | (201) 804-1076 |
| Emergency telephone | : | CHEMTREC: 800-424-9300<br>INTERNATIONAL: 703-527-3887<br>ehs@sika-corp.com |
| Recommended use of the chemical and restrictions on use | : | For further information, refer to the product technical data sheet. |

## 2. Hazards identification

### GHS Classification

| | |
|---|---|
| Flammable aerosols , Category 1 | H222: Extremely flammable aerosol. |
| Gases under pressure , Compressed gas | H280: Contains gas under pressure; may explode if heated. |
| Skin irritation , Category 2 | H315: Causes skin irritation. |
| Eye irritation , Category 2A | H319: Causes serious eye irritation. |
| Respiratory sensitization , Category 1 | H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled. |
| Skin sensitization , Category 1 | H317: May cause an allergic skin reaction. |
| Specific target organ systemic toxicity - single exposure , Category 3, Respiratory system | H335: May cause respiratory irritation. |
| Specific target organ systemic toxicity - repeated exposure , Category 2 (Inhalation) | H373: May cause damage to organs through prolonged or repeated exposure if inhaled. |

### GHS Label element

Hazard pictograms :



Signal Word : Danger

Hazard Statements : H222 Extremely flammable aerosol.
H280 Contains gas under pressure; may explode if heated.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.

H319 Causes serious eye irritation.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335 May cause respiratory irritation.
H373 May cause damage to organs through prolonged or repeated exposure if inhaled.

Precautionary Statements : **Prevention:**
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P211 Do not spray on an open flame or other ignition source.
P251 Pressurized container: Do not pierce or burn, even after use.
P260 Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.
P264 Wash skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P272 Contaminated work clothing should not be allowed out of the workplace.
P280 Wear eye protection/ face protection.
P280 Wear protective gloves.
P285 In case of inadequate ventilation wear respiratory protection.
**Response:**
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P337 + P313 If eye irritation persists: Get medical advice/ attention.
P342 + P311 If experiencing respiratory symptoms: Call a POISON CENTER or doctor/ physician.
P362 Take off contaminated clothing and wash before reuse.
**Storage:**
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.
P410 + P412 Protect from sunlight. Do not expose to temperatures exceeding 50 °C/ 122 °F.
**Disposal:**
P501 Dispose of contents/ container to an approved waste disposal plant.

See Section 11 for more detailed information on health effects and symptoms.

## 3. Composition/information on ingredients

**Hazardous ingredients**

| Chemical Name | CAS-No. | Concentration (%) |
|---|---|---|

| | | |
|---|---|---|
| 4,4'-methylenediphenyl diisocyanate | 101-68-8 | >= 10 - < 20 % |
| Diphenylmethanediisocyanate, isomeres and homologues | 9016-87-9 | >= 10 - < 20 % |
| Dimethyl ether | 115-10-6 | >= 5 - < 10 % |
| Isobutane | 75-28-5 | >= 5 - < 10 % |
| Propane | 74-98-6 | >= 5 - < 10 % |

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.

## 4. First aid measures

If inhaled : Move to fresh air.

In case of skin contact : Take off contaminated clothing and shoes immediately.
Wash off with soap and plenty of water.
If symptoms persist, call a physician.

In case of eye contact : Immediately flush eye(s) with plenty of water.
Remove contact lenses.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.

If swallowed : Clean mouth with water and drink afterwards plenty of water.
Do NOT induce vomiting.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
Obtain medical attention.

Most important symptoms and effects, both acute and delayed : irritant effects
sensitizing effects

Asthmatic appearance
Cough
Respiratory disorder
Allergic reactions
Excessive lachrymation
Erythema
Dermatitis
See Section 11 for more detailed information on health effects and symptoms.

Protection of first-aiders : Move out of dangerous area.
Consult a physician.
Show this material safety data sheet to the doctor in attendance.

Notes to physician : Treat symptomatically.

## 5. Fire-fighting measures

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

| | | |
|---|---|---|
| Unsuitable extinguishing media | : | Water |
| Specific extinguishing methods | : | Use water spray to cool unopened containers.<br>Collect contaminated fire extinguishing water separately. This must not be discharged into drains.<br>Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. |
| Special protective equipment for fire-fighters | : | In the event of fire, wear self-contained breathing apparatus. |

## 6. Accidental release measures

| | | |
|---|---|---|
| Personal precautions, protective equipment and emergency procedures | : | Use personal protective equipment.<br>Deny access to unprotected persons. |
| Environmental precautions | : | Do not flush into surface water or sanitary sewer system.<br>Local authorities should be advised if significant spillages cannot be contained. |

## 7. Handling and storage

| | | |
|---|---|---|
| Advice on safe handling | : | Do not breathe vapors or spray mist.<br>Avoid exceeding the given occupational exposure limits (see section 8).<br>Do not get in eyes, on skin, or on clothing.<br>For personal protection see section 8.<br>Persons with a history of skin sensitization problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.<br>Smoking, eating and drinking should be prohibited in the application area.<br>Take precautionary measures against static discharge.<br>Open drum carefully as content may be under pressure.<br>Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors).<br>Follow standard hygiene measures when handling chemical products. |
| Conditions for safe storage | : | BEWARE: Aerosol is pressurized. Keep away from direct sun exposure and temperatures over 122 °F. Do not open by force or throw into fire even after use. Do not spray on flames or red-hot objects.<br>Store in original container.<br>Keep in a well-ventilated place.<br>Observe label precautions.<br>Store in accordance with local regulations. |
| Materials to avoid | : | no data available |

## 8. Exposure controls/personal protection

| Component | CAS-No. | Basis ** | Value | Exposure limit(s)* / Form of exposure |
|---|---|---|---|---|
| 4,4'-methylenediphenyl diisocyanate | 101-68-8 | ACGIH | TWA | 0.005 ppm |
| | | OSHA Z-1 | C | 0.02 ppm<br>0.2 mg/m3 |
| | | OSHA P0 | C | 0.02 ppm<br>0.2 mg/m3 |
| Isobutane | 75-28-5 | ACGIH | TWA | 1,000 ppm |
| Propane | 74-98-6 | ACGIH | TWA | 1,000 ppm |
| | | OSHA Z-1 | TWA | 1,000 ppm<br>1,800 mg/m3 |
| | | OSHA P0 | TWA | 1,000 ppm<br>1,800 mg/m3 |

*The above mentioned values are in accordance with the legislation in effect at the date of the release of this safety data sheet.

**Basis
ACGIH. Threshold Limit Values (TLV)
OSHA P0. Table Z-1, Limit for Air Contaminat (1989 Vacated Values)
OSHA P1. Permissible Exposure Limits (PEL), Table Z-1, Limit for Air Contaminant
OSHA P2. Permissible Exposure Limits (PEL), Table Z-2
OSHA Z3. Table Z-3, Mineral Dust

**Engineering measures** : Use of adequate ventilation should be sufficient to control worker exposure to airborne contaminants. If the use of this product generates dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.
The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits.

**Personal protective equipment**

Respiratory protection : Use a properly fitted NIOSH approved air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.

The filter class for the respirator must be suitable for the maximum expected contaminant concentration (gas/vapor/aerosol/particulates) that may arise when handling

the product. If this concentration is exceeded, self-contained breathing apparatus must be used.

Hand protection
Remarks : 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.

Eye protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary.

Skin and body protection : Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.

Hygiene measures : Avoid contact with skin, eyes and clothing.
Wash hands before breaks and immediately after handling the product.
Remove respiratory and skin/eye protection only after vapors have been cleared from the area.
Remove contaminated clothing and protective equipment before entering eating areas.
Wash thoroughly after handling.

## 9. Physical and chemical properties

| | | |
|---|---|---|
| Appearance | : | Aerosol containing a compressed gas |
| Color | : | off-white |
| Odor | : | slight<br>hydrocarbon-like |
| Odor Threshold | : | no data available |
| Flash point | : | -155.9 °F (-104.4 °C) |
| Ignition temperature | : | no data available |
| Decomposition temperature | : | no data available |
| Lower explosion limit (Vol%) | : | no data available |
| Upper explosion limit (Vol%) | : | no data available |
| Flammability (solid, gas) | : | no data available |
| Oxidizing properties | : | no data available |
| Autoignition temperature | : | no data available |
| pH | : | Note: not applicable |
| Melting point/range / | : | no data available |

| | | |
|---|---|---|
| Freezing point<br>Boiling point/boiling range | : | no data available |
| Vapor pressure | : | 2,588 mmHg (3,450 hpa) |
| Density | : | 1.1 g/cm3<br>at 68 °F (20 °C) |
| Water solubility | : | Note: insoluble |
| Partition coefficient: n-octanol/water | : | no data available |
| Viscosity, dynamic | : | no data available |
| Viscosity, kinematic | : | > 20.5 mm2/s<br>at 104 °F (40 °C) |
| Relative vapor density | : | no data available |
| Evaporation rate | : | no data available |
| Burning rate | : | no data available |
| Volatile organic compounds (VOC) content | : | 165 g/l |

## 10. Stability and reactivity

| | | |
|---|---|---|
| Reactivity | : | No dangerous reaction known under conditions of normal use. |
| Chemical stability | : | The product is chemically stable. |
| Possibility of hazardous reactions | : | Stable under recommended storage conditions. |
| Conditions to avoid | : | Heat, flames and sparks. |
| Incompatible materials | : | no data available |

## 11. Toxicological information

**Acute toxicity**

**Product**

| | | |
|---|---|---|
| Acute oral toxicity | : | no data available |
| Acute inhalation toxicity | : | no data available |
| Acute dermal toxicity | : | no data available |

**Ingredients:**

**4,4'-methylenediphenyl diisocyanate :**

Acute inhalation toxicity : Acute toxicity estimate : 1.5 mg/l
Test atmosphere: dust/mist
Method: Expert judgment

**Diphenylmethanediisocyanate, isomeres and homologues :**
Acute oral toxicity : LD50 Oral rat: > 10,000 mg/kg

Acute inhalation toxicity : Acute toxicity estimate : 1.5 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: Expert judgment

Acute dermal toxicity : LD50 Dermal rabbit: > 9,400 mg/kg

**Skin corrosion/irritation**

**Product**

Causes skin irritation.

**Serious eye damage/eye irritation**

**Product**

Causes serious eye irritation.

**Respiratory or skin sensitization**

**Product**

May cause an allergic skin reaction.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.

**Germ cell mutagenicity**

**Product**

Mutagenicity : no data available

**Carcinogenicity**

**Product**

Carcinogenicity : no data available

**IARC** not applicable
**NTP** not applicable

**Reproductive Toxicity/Fertility**

**Product**

Reproductive toxicity : no data available

**Reproductive Toxicity/Development/Teratogenicity**

**Product**

Teratogenicity : no data available

**STOT-single exposure**

**Product**

Assessment: May cause respiratory irritation.

**STOT-repeated exposure**

Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

**Product**

Assessment: May cause damage to organs through prolonged or repeated exposure if inhaled.

**Aspiration toxicity**

**Product**

no data available

## 12. Ecological information

| | |
|---|---|
| Other information | Do not empty into drains; dispose of this material and its container in a safe way.<br>Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. |

## 13. Disposal considerations

**Disposal methods**

| | | |
|---|---|---|
| Waste from residues | : | 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. |
| Contaminated packaging | : | Empty containers should be taken to an approved waste handling site for recycling or disposal. |

## 14. Transport information

**DOT**

| | |
|---|---|
| UN number | 1950 |
| Description of the goods | Aerosols |
| Class | 2.1 |
| Labels | 2.1 |
| Emergency Response Guidebook Number | 126 |

**IATA**

| | |
|---|---|
| UN number | 1950 |
| Description of the goods | Aerosols, flammable |
| Class | 2.1 |
| Labels | 2.1 |
| Packing instruction (cargo aircraft) | 203 |
| Packing instruction (passenger aircraft) | 203 |
| Packing instruction (passenger aircraft) | Y203 |

**IMDG**

| | |
|---|---|
| UN number | 1950 |
| Description of the goods | AEROSOLS |
| Class | 2.1 |
| Labels | 2.1 |
| EmS Number 1 | F-D |
| EmS Number 2 | S-U |
| Marine pollutant | no |

DOT: For Limited Quantity exceptions reference 49 CFR 173.306 (i)
IMDG: For Limited Quantity special provisions reference IMDG Code Chapter 3.4
IATA: For Limited Quantity provisions reference IATA DGR Section 2.7 and other applicable sections.

**Special precautions for user**
no data available

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**
not applicable

## 15. Regulatory information

**TSCA list** : All chemical substances in this product are either listed on the TSCA Inventory or are in compliance with a TSCA Inventory exemption.

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

**CERCLA Reportable Quantity**
This material does not contain any components with a CERCLA RQ.

**SARA304 Reportable Quantity**
This material does not contain any components with a section 304 EHS RQ.

**SARA 311/312 Hazards** : Acute Health Hazard
Chronic Health Hazard
Sudden Release of Pressure Hazard

Fire Hazard

**SARA 302** : 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:

| | | |
|---|---|---|
| 4,4'-methylenediphenyl diisocyanate | 101-68-8 | 10.00 % |
| Diphenylmethanediisocyanate, isomeres and homologues | 9016-87-9 | 10.00 % |

**Clean Air Act**

**Ozone-Depletion Potential** This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

The following chemical(s) are listed as HAP under the U.S. Clean Air Act, Section 12 (40 CFR 61):

| | | |
|---|---|---|
| 4,4'-methylenediphenyl diisocyanate | 101-68-8 | 10.00 % |

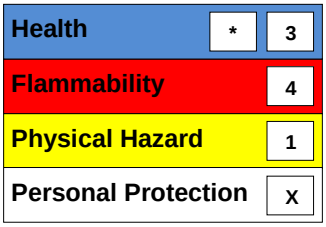
The following chemical(s) are listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F):

| | | |
|---|---|---|
| Dimethyl ether | 115-10-6 | 7.00 % |
| Isobutane | 75-28-5 | 7.00 % |
| Propane | 74-98-6 | 5.00 % |

**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.

## 16. Other information

**HMIS Classification**




**Caution:** HMIS® rating is based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® rating is not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® rating is to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). Please note HMIS® attempts to convey full health warning information to all employees.

**Notes to Reader**

The information contained in this Safety Data Sheet applies only to the actual Sika Corporation ("Sika") product identified and described herein. This information is not intended to address, nor does it address the use or application of the identified Sika product in combination with any other material, product or process. All of the information set forth herein is based on technical data regarding the identified product that Sika believes to be reliable as of the date hereof. Prior to each use of any Sika product, the user must always read and follow the warnings and instructions on the product's current Product Data Sheet, product label and Safety Data Sheet for each Sika product, which are available at web site and/or telephone number listed in Section 1 of this SDS.

SIKA MAKES NO WARRANTIES EXPRESS OR IMPLIED AND ASSUMES NO LIABILITY ARISING FROM THIS INFORMATION OR ITS USE. SIKA SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES AND SHALL NOT BE RESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHTS HELD BY OTHERS.

All sales of Sika products are subject to its current terms and conditions of sale available at www.sikausa.com or 201-933-8800.

Revision Date 09/18/2014

Material number: 106712

## 1. Identification

| | | |
|---|---|---|
| Product name | : | Sikadur® 31 Hi-Mod Gel LPL Part A |
| Supplier | : | Sika Corporation |
| Address | : | 201 Polito Avenue<br>Lyndhurst, NJ 07071<br>USA<br>www.sikausa.com |
| Telephone | : | (201) 933-8800 |
| Telefax | : | (201) 804-1076 |
| Emergency telephone | : | CHEMTREC: 800-424-9300<br>INTERNATIONAL: 703-527-3887<br>ehs@sika-corp.com |
| Recommended use of the chemical and restrictions on use | : | For further information, refer to the product technical data sheet. |

## 2. Hazards identification

### GHS Classification

| | |
|---|---|
| Skin irritation, Category 2 | H315: Causes skin irritation. |
| Eye irritation, Category 2A | H319: Causes serious eye irritation. |
| Skin sensitization, Category 1 | H317: May cause an allergic skin reaction. |
| Germ cell mutagenicity, Category 2 | H341: Suspected of causing genetic defects. |
| Carcinogenicity, Category 1A | H350: May cause cancer. |

### GHS Label element

Hazard pictograms :



Signal Word : Danger

Hazard Statements : H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H341 Suspected of causing genetic defects.
H350 May cause cancer.

Precautionary Statements : **Prevention:**
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.
P264 Wash skin thoroughly after handling.
P272 Contaminated work clothing should not be allowed out of

the workplace.
P280 Wear eye protection/ face protection.
P280 Wear protective gloves.
P281 Use personal protective equipment as required.
**Response:**
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P337 + P313 If eye irritation persists: Get medical advice/ attention.
P362 Take off contaminated clothing and wash before reuse.
**Storage:**
P405 Store locked up.
**Disposal:**
P501 Dispose of contents/ container to an approved waste disposal plant.

See Section 11 for more detailed information on health effects and symptoms.

## 3. Composition/information on ingredients

**Hazardous ingredients**

| Chemical Name | CAS-No. | Concentration (%) |
|---|---|---|
| bisphenol-A-(epichlorhydrin) epoxy resin | 25068-38-6 | >= 25 - < 50 % |
| Quartz (SiO2) | 14808-60-7 | >= 25 - < 50 % |
| 2,3-epoxypropyl o-tolyl ether | 2210-79-9 | >= 2 - < 5 % |
| titanium dioxide | 13463-67-7 | >= 0 - < 1 % |
| Quartz (SiO2) <5µm | 14808-60-7 | >= 0 - < 1 % |

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.

## 4. First aid measures

If inhaled : Move to fresh air.
Consult a physician after significant exposure.

In case of skin contact : Take off contaminated clothing and shoes immediately.
Wash off with soap and plenty of water.
If symptoms persist, call a physician.

In case of eye contact : Immediately flush eye(s) with plenty of water.
Remove contact lenses.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.

| | | |
|---|---|---|
| If swallowed | : | Clean mouth with water and drink afterwards plenty of water.<br>Induce vomiting immediately and call a physician.<br>Do NOT induce vomiting.<br>Do not give milk or alcoholic beverages.<br>Never give anything by mouth to an unconscious person. |
| Most important symptoms and effects, both acute and delayed | : | irritant effects<br>sensitizing effects<br>carcinogenic effects<br><br>Allergic reactions<br>Excessive lachrymation<br>Erythema<br>Dermatitis<br>See Section 11 for more detailed information on health effects and symptoms. |
| Protection of first-aiders | : | Move out of dangerous area.<br>Consult a physician.<br>Show this material safety data sheet to the doctor in attendance. |
| Notes to physician | : | Treat symptomatically. |

## 5. Fire-fighting measures

| | | |
|---|---|---|
| Suitable extinguishing media | : | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. |
| Specific extinguishing methods | : | Collect contaminated fire extinguishing water separately. This must not be discharged into drains.<br>Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. |
| Special protective equipment for fire-fighters | : | In the event of fire, wear self-contained breathing apparatus. |

## 6. Accidental release measures

| | | |
|---|---|---|
| Personal precautions, protective equipment and emergency procedures | : | Use personal protective equipment.<br>Deny access to unprotected persons. |
| Environmental precautions | : | Do not flush into surface water or sanitary sewer system.<br>If the product contaminates rivers and lakes or drains inform respective authorities.<br>Local authorities should be advised if significant spillages cannot be contained. |
| Methods and materials for containment and cleaning up | : | Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).<br>Keep in suitable, closed containers for disposal. |

## 7. Handling and storage

Advice on safe handling : Do not breathe vapors or spray mist.
Avoid exceeding the given occupational exposure limits (see section 8).
Do not get in eyes, on skin, or on clothing.
For personal protection see section 8.
Persons with a history of skin sensitization problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.
Smoking, eating and drinking should be prohibited in the application area.
Follow standard hygiene measures when handling chemical products.

Conditions for safe storage : Prevent unauthorized access.
Store in original container.
Keep container tightly closed in a dry and well-ventilated place.
Observe label precautions.
Store in accordance with local regulations.

Materials to avoid : no data available

## 8. Exposure controls/personal protection

| Component | CAS-No. | Basis ** | Value | Exposure limit(s)* / Form of exposure |
|---|---|---|---|---|
| Quartz (SiO2) | 14808-60-7 | ACGIH | TWA | 0.025 mg/m3<br>Respirable fraction |
| | | OSHA Z-3 | TWA | 30 mg/m3 /<br>%SiO2+2<br>total dust |
| | | OSHA Z-3 | TWA | 10 mg/m3 /<br>%SiO2+2<br>respirable |
| | | OSHA Z-3 | TWA | 250 mppcf /<br>%SiO2+5<br>respirable |
| | | OSHA P0 | TWA | 0.1 mg/m3<br>Respirable fraction |
| titanium dioxide | 13463-67-7 | ACGIH | TWA | 10 mg/m3 |
| | | OSHA P0 | TWA | 10 mg/m3<br>Total |

| | | | | |
|---|---|---|---|---|
| | | OSHA Z-1 | TWA | 15 mg/m3<br>total dust |
| Quartz (SiO2) <5µm | 14808-60-7 | ACGIH | TWA | 0.025 mg/m3<br>Respirable fraction |
| | | OSHA Z-3 | TWA | 30 mg/m3 /<br>%SiO2+2<br>total dust |
| | | OSHA Z-3 | TWA | 10 mg/m3 /<br>%SiO2+2<br>respirable |
| | | OSHA Z-3 | TWA | 250 mppcf /<br>%SiO2+5<br>respirable |
| | | OSHA P0 | TWA | 0.1 mg/m3<br>Respirable fraction |

*The above mentioned values are in accordance with the legislation in effect at the date of the release of this safety data sheet.

**__**Basis**__**
ACGIH. Threshold Limit Values (TLV)
OSHA P0. Table Z-1, Limit for Air Contaminat (1989 Vacated Values)
OSHA P1. Permissible Exposure Limits (PEL), Table Z-1, Limit for Air Contaminant
OSHA P2. Permissible Exposure Limits (PEL), Table Z-2
OSHA Z3. Table Z-3, Mineral Dust

**Engineering measures** : Use of adequate ventilation should be sufficient to control worker exposure to airborne contaminants. If the use of this product generates dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

**Personal protective equipment**

Respiratory protection : Use a properly fitted NIOSH approved air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.

The filter class for the respirator must be suitable for the maximum expected contaminant concentration (gas/vapor/aerosol/particulates) that may arise when handling the product. If this concentration is exceeded, self-contained breathing apparatus must be used.

Hand protection
Remarks : 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.

| | | |
|---|---|---|
| Eye protection | : | Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary. |
| Skin and body protection | : | Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. |
| Hygiene measures | : | Avoid contact with skin, eyes and clothing.<br>Wash hands before breaks and immediately after handling the product.<br>Remove contaminated clothing and protective equipment before entering eating areas.<br>Wash thoroughly after handling. |

## 9. Physical and chemical properties

| | | |
|---|---|---|
| Appearance | : | paste |
| Color | : | white |
| Odor | : | aromatic |
| Odor Threshold | : | no data available |
| Flash point | : | > 212 °F (> 100 °C) |
| Ignition temperature | : | not applicable |
| Decomposition temperature | : | no data available |
| Lower explosion limit (Vol%) | : | no data available |
| Upper explosion limit (Vol%) | : | no data available |
| Flammability (solid, gas) | : | no data available |
| Oxidizing properties | : | no data available |
| Autoignition temperature | : | no data available |
| pH | : | no data available |
| Melting point/range / Freezing point | : | no data available |
| Boiling point/boiling range | : | no data available |
| Vapor pressure | : | no data available |
| Density | : | 1.46 g/cm3<br>at 68 °F (20 °C) |
| Water solubility | : | Note: insoluble |

| | | |
|---|---|---|
| Partition coefficient: n-octanol/water | : | no data available |
| Viscosity, dynamic | : | no data available |
| Viscosity, kinematic | : | > 20.5 mm2/s<br>at 104 °F (40 °C) |
| Relative vapor density | : | no data available |
| Evaporation rate | : | no data available |
| Burning rate | : | no data available |
| Volatile organic compounds (VOC) content | : | 1.3 g/l<br>A+B Combined |

## 10. Stability and reactivity

| | | |
|---|---|---|
| Reactivity | : | No dangerous reaction known under conditions of normal use. |
| Chemical stability | : | The product is chemically stable. |
| Possibility of hazardous reactions | : | Stable under recommended storage conditions. |
| Conditions to avoid | : | no data available |
| Incompatible materials | : | no data available |

## 11. Toxicological information

### Acute toxicity

**Product**

| | | |
|---|---|---|
| Acute oral toxicity | : | no data available |
| Acute inhalation toxicity | : | no data available |
| Acute dermal toxicity | : | no data available |

**Ingredients:**

**bisphenol-A-(epichlorhydrin) epoxy resin :**

| | | |
|---|---|---|
| Acute oral toxicity | : | LD50 Oral rat: > 5,000 mg/kg |
| Acute dermal toxicity | : | LD50 Dermal rabbit: > 20,000 mg/kg |

### Skin corrosion/irritation

**Product**

Causes skin irritation.

**Serious eye damage/eye irritation**

**Product**

Causes serious eye irritation.

**Respiratory or skin sensitization**

**Product**

May cause an allergic skin reaction.

**Germ cell mutagenicity**

**Product**

Mutagenicity : Suspected of causing genetic defects.

**Carcinogenicity**

**Product**

Carcinogenicity : May cause cancer.

| | | |
|---|---|---|
| **IARC** | Group 1: Carcinogenic to humans | |
| | Quartz (SiO2) | 14808-60-7 |
| | Quartz (SiO2) <5µm | 14808-60-7 |
| | Group 2B: Possibly carcinogenic to humans | |
| | titanium dioxide | 13463-67-7 |
| **NTP** | Known to be human carcinogen | |
| | Quartz (SiO2) | 14808-60-7 |
| | Quartz (SiO2) <5µm | 14808-60-7 |

**Reproductive Toxicity/Fertility**

**Product**

Reproductive toxicity : no data available

**Reproductive Toxicity/Development/Teratogenicity**

**Product**

Teratogenicity : no data available

**STOT-single exposure**

**Product**

Assessment: no data available

**STOT-repeated exposure**

Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

**Product**

Assessment: no data available

**Aspiration toxicity**

**Product**

no data available

## 12. Ecological information

| | |
|---|---|
| Other information | Do not empty into drains; dispose of this material and its container in a safe way.<br>Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.<br>Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.<br>May be harmful to the environment if released in large quantities.<br>Water polluting material. |

## 13. Disposal considerations

**Disposal methods**

| | | |
|---|---|---|
| Waste from residues | : | 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. |
| Contaminated packaging | : | Empty containers should be taken to an approved waste handling site for recycling or disposal. |

## 14. Transport information

**DOT**
Not regulated

**IATA**

| | |
|---|---|
| UN number | 3082 |
| Description of the goods | Environmentally hazardous substance, liquid, n.o.s. (bisphenol-A-(epichlorhydrin) epoxy resin) |
| Class | 9 |
| Packing group | III |
| Labels | 9 |
| Packing instruction (cargo aircraft) | 964 |
| Packing instruction (passenger aircraft) | 964 |
| Packing instruction (passenger aircraft) | Y964 |

**IMDG**

| | |
|---|---|
| UN number | 3082 |

| | |
|---|---|
| Description of the goods | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.<br>(bisphenol-A-(epichlorhydrin) epoxy resin) |
| Class | 9 |
| Packing group | III |
| Labels | 9 |
| EmS Number 1 | F-A |
| EmS Number 2 | S-F |
| Marine pollutant | yes |

IMDG: For Limited Quantity special provisions reference IMDG Code Chapter 3.4

**Special precautions for user**
no data available

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**
not applicable

## 15. Regulatory information

**TSCA list** : All chemical substances in this product are either listed on the TSCA Inventory or are in compliance with a TSCA Inventory exemption.

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

**CERCLA Reportable Quantity**
This material does not contain any components with a CERCLA RQ.

**SARA304 Reportable Quantity**
This material does not contain any components with a section 304 EHS RQ.

**SARA 311/312 Hazards** : Acute Health Hazard
Chronic Health Hazard

**SARA 302** : SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**SARA 313** : SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**Clean Air Act**

**Ozone-Depletion Potential** This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 12 (40 CFR 61).
This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

**California Prop 65** WARNING! This product contains a chemical known in the State of California to cause cancer.

## 16. Other information

**HMIS Classification**

| | | |
|---|---|---|
| **Health** | * | 3 |
| **Flammability** | | 1 |
| **Physical Hazard** | | 0 |
| **Personal Protection** | | X |

**Caution:** HMIS® rating is based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® rating is not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® rating is to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). Please note HMIS® attempts to convey full health warning information to all employees.

**Notes to Reader**

The information contained in this Safety Data Sheet applies only to the actual Sika Corporation ("Sika") product identified and described herein. This information is not intended to address, nor does it address the use or application of the identified Sika product in combination with any other material, product or process. All of the information set forth herein is based on technical data regarding the identified product that Sika believes to be reliable as of the date hereof. Prior to each use of any Sika product, the user must always read and follow the warnings and instructions on the product's current Product Data Sheet, product label and Safety Data Sheet for each Sika product, which are available at web site and/or telephone number listed in Section 1 of this SDS.

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All sales of Sika products are subject to its current terms and conditions of sale available at www.sikausa.com or 201-933-8800.

Revision Date 07/14/2014

Material number: 459890

## 1. Identification

| | | |
|---|---|---|
| Product name | : | Sikadur® 31 Hi-Mod Gel LPL Part B |
| Supplier | : | Sika Corporation |
| Address | : | 201 Polito Avenue<br>Lyndhurst, NJ 07071<br>USA<br>www.sikausa.com |
| Telephone | : | (201) 933-8800 |
| Telefax | : | (201) 804-1076 |
| Emergency telephone | : | CHEMTREC: 800-424-9300<br>INTERNATIONAL: 703-527-3887<br>ehs@sika-corp.com |
| Recommended use of the chemical and restrictions on use | : | For further information, refer to the product technical data sheet. |

## 2. Hazards identification

### GHS Classification

| | |
|---|---|
| Skin corrosion, Category 1B | H314: Causes severe skin burns and eye damage. |
| Serious eye damage, Category 1 | H318: Causes serious eye damage. |
| Skin sensitization, Category 1 | H317: May cause an allergic skin reaction. |
| Carcinogenicity, Category 1A | H350: May cause cancer. |
| Specific target organ systemic toxicity - repeated exposure, Category 2 (Oral) | H373: May cause damage to organs through prolonged or repeated exposure if swallowed. |

### GHS Label element

Hazard pictograms :



Signal Word : Danger

Hazard Statements : H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
H350 May cause cancer.
H373 May cause damage to organs through prolonged or repeated exposure if swallowed.

Precautionary Statements : **Prevention:**
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P260 Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.
P272 Contaminated work clothing should not be allowed out of

the workplace.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P281 Use personal protective equipment as required.
**Response:**
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P310 Immediately call a POISON CENTER or doctor/ physician.
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P363 Wash contaminated clothing before reuse.
**Storage:**
P405 Store locked up.
**Disposal:**
P501 Dispose of contents/ container to an approved waste disposal plant.

See Section 11 for more detailed information on health effects and symptoms.

## 3. Composition/information on ingredients

**Hazardous ingredients**

| Chemical Name | CAS-No. | Concentration (%) |
|---|---|---|
| Quartz (SiO2) | 14808-60-7 | >= 50 - <= 100 % |
| Polyoxypropylenediamine | 9046-10-0 | >= 10 - < 20 % |
| 4,4'-methylenebis(cyclohexylamine) | 1761-71-3 | >= 2 - < 5 % |
| Quartz (SiO2) <5µm | 14808-60-7 | >= 0 - < 1 % |

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.

## 4. First aid measures

If inhaled : Move to fresh air.
Consult a physician after significant exposure.

In case of skin contact : Take off contaminated clothing and shoes immediately.
Wash off with soap and plenty of water.
Immediate medical treatment is necessary as untreated

wounds from corrosion of the skin heal slowly and with difficulty.

| | | |
|---|---|---|
| In case of eye contact | : | Small amounts splashed into eyes can cause irreversible tissue damage and blindness.<br>In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.<br>Continue rinsing eyes during transport to hospital.<br>Remove contact lenses.<br>Keep eye wide open while rinsing. |
| If swallowed | : | Clean mouth with water and drink afterwards plenty of water.<br>Do NOT induce vomiting.<br>Do not give milk or alcoholic beverages.<br>Never give anything by mouth to an unconscious person.<br>Take victim immediately to hospital. |
| Most important symptoms and effects, both acute and delayed | : | Health injuries may be delayed.<br>corrosive effects<br>sensitizing effects<br>carcinogenic effects<br><br>Allergic reactions<br>Dermatitis<br>See Section 11 for more detailed information on health effects and symptoms. |
| Protection of first-aiders | : | Move out of dangerous area.<br>Consult a physician.<br>Show this material safety data sheet to the doctor in attendance. |
| Notes to physician | : | Treat symptomatically. |

## 5. Fire-fighting measures

| | | |
|---|---|---|
| Suitable extinguishing media | : | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. |
| Specific extinguishing methods | : | Collect contaminated fire extinguishing water separately. This must not be discharged into drains.<br>Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. |
| Special protective equipment for fire-fighters | : | In the event of fire, wear self-contained breathing apparatus. |

## 6. Accidental release measures

| | | |
|---|---|---|
| Personal precautions, protective equipment and emergency procedures | : | Use personal protective equipment.<br>Deny access to unprotected persons. |
| Environmental precautions | : | Do not flush into surface water or sanitary sewer system.<br>If the product contaminates rivers and lakes or drains inform respective authorities. |

Local authorities should be advised if significant spillages cannot be contained.

Methods and materials for containment and cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
Keep in suitable, closed containers for disposal.

## 7. Handling and storage

Advice on safe handling : Avoid exceeding the given occupational exposure limits (see section 8).
Do not get in eyes, on skin, or on clothing.
For personal protection see section 8.
Persons with a history of skin sensitization problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.
Smoking, eating and drinking should be prohibited in the application area.
Follow standard hygiene measures when handling chemical products.

Conditions for safe storage : Prevent unauthorized access.
Store in original container.
Keep container tightly closed in a dry and well-ventilated place.
Observe label precautions.
Store in accordance with local regulations.

Materials to avoid : no data available

## 8. Exposure controls/personal protection

| Component | CAS-No. | Basis ** | Value | Exposure limit(s)* / Form of exposure |
|---|---|---|---|---|
| Quartz (SiO2) | 14808-60-7 | ACGIH | TWA | 0.025 mg/m3<br>Respirable fraction |
| | | OSHA Z-3 | TWA | 30 mg/m3 /<br>%SiO2+2<br>total dust |
| | | OSHA Z-3 | TWA | 10 mg/m3 /<br>%SiO2+2<br>respirable |
| | | OSHA Z-3 | TWA | 250 mppcf /<br>%SiO2+5<br>respirable |
| | | OSHA P0 | TWA | 0.1 mg/m3<br>Respirable fraction |

| | | | | |
|---|---|---|---|---|
| Quartz (SiO2) <5µm | | ACGIH | TWA | 0.025 mg/m3 Respirable fraction |
| | | OSHA Z-3 | TWA | 30 mg/m3 / %SiO2+2 total dust |
| | | OSHA Z-3 | TWA | 10 mg/m3 / %SiO2+2 respirable |
| | | OSHA Z-3 | TWA | 250 mppcf / %SiO2+5 respirable |
| | | OSHA P0 | TWA | 0.1 mg/m3 Respirable fraction |

*The above mentioned values are in accordance with the legislation in effect at the date of the release of this safety data sheet.

**__Basis__
ACGIH. Threshold Limit Values (TLV)
OSHA P0. Table Z-1, Limit for Air Contaminat (1989 Vacated Values)
OSHA P1. Permissible Exposure Limits (PEL), Table Z-1, Limit for Air Contaminant
OSHA P2. Permissible Exposure Limits (PEL), Table Z-2
OSHA Z3. Table Z-3, Mineral Dust

**Engineering measures** : Use of adequate ventilation should be sufficient to control worker exposure to airborne contaminants. If the use of this product generates dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

**Personal protective equipment**

Respiratory protection : Use a properly fitted NIOSH approved air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.

The filter class for the respirator must be suitable for the maximum expected contaminant concentration (gas/vapor/aerosol/particulates) that may arise when handling the product. If this concentration is exceeded, self-contained breathing apparatus must be used.

Hand protection
Remarks : 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.

| | | |
|---|---|---|
| Eye protection | : | Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary. |
| Skin and body protection | : | Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. |
| Hygiene measures | : | Avoid contact with skin, eyes and clothing.<br>Wash hands before breaks and immediately after handling the product.<br>Remove contaminated clothing and protective equipment before entering eating areas.<br>Wash thoroughly after handling. |

## 9. Physical and chemical properties

| | | |
|---|---|---|
| Appearance | : | paste |
| Color | : | dark gray |
| Odor | : | amine-like |
| Odor Threshold | : | no data available |
| Flash point | : | > 212 °F (> 100 °C) |
| Ignition temperature | : | not applicable |
| Decomposition temperature | : | no data available |
| Lower explosion limit (Vol%) | : | no data available |
| Upper explosion limit (Vol%) | : | no data available |
| Flammability (solid, gas) | : | no data available |
| Oxidizing properties | : | no data available |
| Autoignition temperature | : | no data available |
| pH | : | Note: not applicable |
| Melting point/range / Freezing point | : | no data available |
| Boiling point/boiling range | : | no data available |
| Vapor pressure | : | no data available |
| Density | : | 1.99 g/cm3<br>at 68 °F (20 °C) |
| Water solubility | : | Note: slightly soluble |
| Partition coefficient: n- | : | no data available |

| | | |
|---|---|---|
| octanol/water | | |
| Viscosity, dynamic | : | no data available |
| Viscosity, kinematic | : | > 20.5 mm2/s<br>at 104 °F (40 °C) |
| Relative vapor density | : | no data available |
| Evaporation rate | : | no data available |
| Burning rate | : | no data available |
| Volatile organic compounds (VOC) content | : | 1.3 g/l<br>A+B Combined |

## 10. Stability and reactivity

| | | |
|---|---|---|
| Reactivity | : | No dangerous reaction known under conditions of normal use. |
| Chemical stability | : | The product is chemically stable. |
| Possibility of hazardous reactions | : | Stable under recommended storage conditions. |
| Conditions to avoid | : | no data available |
| Incompatible materials | : | no data available |

## 11. Toxicological information

### Acute toxicity

**Product**

| | | |
|---|---|---|
| Acute oral toxicity | : | no data available |
| Acute inhalation toxicity | : | no data available |
| Acute dermal toxicity | : | no data available |

**Ingredients:**

**4,4'-methylenebis(cyclohexylamine) :**

| | | |
|---|---|---|
| Acute oral toxicity | : | LD50 Oral rat: 625 mg/kg |
| Acute dermal toxicity | : | LD50 Dermal rabbit: 2,110 mg/kg |

### Skin corrosion/irritation

**Product**

Causes severe skin burns and eye damage.

**Serious eye damage/eye irritation**

**Product**

no data available

**Respiratory or skin sensitization**

**Product**

May cause an allergic skin reaction.

**Ingredients:**

**4,4'-methylenebis(cyclohexylamine) :**
Test Method: Buehler Test
Classification: The product is a skin sensitizer, sub-category 1B.
Result: The product is a skin sensitizer, sub-category 1B.

**Germ cell mutagenicity**

**Product**

Mutagenicity : no data available

**Carcinogenicity**

**Product**

Carcinogenicity : May cause cancer.

| | | |
|---|---|---|
| **IARC** | Group 1: Carcinogenic to humans | |
| | Quartz (SiO2) | 14808-60-7 |
| | Quartz (SiO2) <5µm | 14808-60-7 |
| **NTP** | Known to be human carcinogen | |
| | Quartz (SiO2) | 14808-60-7 |
| | Quartz (SiO2) <5µm | 14808-60-7 |

**Reproductive Toxicity/Fertility**

**Product**

Reproductive toxicity : no data available

**Reproductive Toxicity/Development/Teratogenicity**

**Product**

Teratogenicity : no data available

**STOT-single exposure**

**Product**

Assessment: no data available

**STOT-repeated exposure**

Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

**Product**

Assessment: May cause damage to organs through prolonged or repeated exposure if

swallowed.

**Aspiration toxicity**

**Product**

no data available

## 12. Ecological information

Other information: Do not empty into drains; dispose of this material and its container in a safe way.
Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

**Component:**

| | | |
|---|---|---|
| 4,4'-methylenebis(cyclohexylamine) | 1761-71-3 | Toxicity to daphnia and other aquatic invertebrates Chronic toxicity: EC50<br>Species: Daphnia magna (Water flea)<br>Concentration: 6.84 mg/l<br>Exposure time: 48 h |

## 13. Disposal considerations

**Disposal methods**

Waste from residues : 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.

Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.

## 14. Transport information

**DOT**

| | |
|---|---|
| UN number | 3267 |
| Description of the goods | Corrosive liquid, basic, organic, n.o.s. (Polyoxypropylenediamine, 4,4'-methylenebis(cyclohexylamine)) |
| Class | 8 |
| Packing group | III |
| Labels | 8 |
| Emergency Response Guidebook Number | 153 |

**IATA**

| | |
|---|---|
| UN number | 3267 |

| | |
|---|---|
| Description of the goods | Corrosive liquid, basic, organic, n.o.s. (Polyoxypropylenediamine, 4,4'-methylenebis(cyclohexylamine)) |
| Class | 8 |
| Packing group | III |
| Labels | 8 |
| Packing instruction (cargo aircraft) | 856 |
| Packing instruction (passenger aircraft) | 852 |
| Packing instruction (passenger aircraft) | Y841 |

**IMDG**

| | |
|---|---|
| UN number | 3267 |
| Description of the goods | CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S. (Polyoxypropylenediamine, 4,4'-methylenebis(cyclohexylamine)) |
| Class | 8 |
| Packing group | III |
| Labels | 8 |
| EmS Number 1 | F-A |
| EmS Number 2 | S-B |
| Marine pollutant | no |

**Special precautions for user**
no data available

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**
not applicable

## 15. Regulatory information

**TSCA list** : All chemical substances in this product are either listed on the TSCA Inventory or are in compliance with a TSCA Inventory exemption.

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

**CERCLA Reportable Quantity**
This material does not contain any components with a CERCLA RQ.

**SARA304 Reportable Quantity**
This material does not contain any components with a section 304 EHS RQ.

**SARA 311/312 Hazards** : Acute Health Hazard
Chronic Health Hazard

**SARA 302** : SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**SARA 313** : SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**Clean Air Act**

**Ozone-Depletion Potential** This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 12 (40 CFR 61).
This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

**California Prop 65** WARNING! This product contains a chemical known in the State of California to cause cancer.

## 16. Other information

**HMIS Classification**

| | | |
|---|---|---|
| **Health** | * | 3 |
| **Flammability** | | 1 |
| **Physical Hazard** | | 0 |
| **Personal Protection** | | X |

**Caution:** HMIS® rating is based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® rating is not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® rating is to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). Please note HMIS® attempts to convey full health warning information to all employees.

**Notes to Reader**

The information contained in this Safety Data Sheet applies only to the actual Sika Corporation ("Sika") product identified and described herein. This information is not intended to address, nor does it address the use or application of the identified Sika product in combination with any other material, product or process. All of the information set forth herein is based on technical data regarding the identified product that Sika believes to be reliable as of the date hereof. Prior to each use of any Sika product, the user must always read and follow the warnings and instructions on the product's current Product Data Sheet, product label and Safety Data Sheet for each Sika product, which are available at web site and/or telephone number listed in Section 1 of this SDS.

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All sales of Sika products are subject to its current terms and conditions of sale available at www.sikausa.com or 201-933-8800.

Revision Date 06/27/2014

Material number: 459900

## 1. Identification

| | | |
|---|---|---|
| Product name | : | Sikadur®-32 Hi-Mod Part A |
| Supplier | : | Sika Corporation |
| Address | : | 201 Polito Avenue<br>Lyndhurst, NJ 07071<br>USA<br>www.sikausa.com |
| Telephone | : | (201) 933-8800 |
| Telefax | : | (201) 804-1076 |
| Emergency telephone | : | CHEMTREC: 800-424-9300<br>INTERNATIONAL: 703-527-3887<br>ehs@sika-corp.com |
| Recommended use of the chemical and restrictions on use | : | For further information, refer to the product technical data sheet. |

## 2. Hazards identification

### GHS Classification

| | |
|---|---|
| Skin irritation, Category 2 | H315: Causes skin irritation. |
| Eye irritation, Category 2A | H319: Causes serious eye irritation. |
| Skin sensitization, Category 1 | H317: May cause an allergic skin reaction. |
| Germ cell mutagenicity, Category 2 | H341: Suspected of causing genetic defects. |
| Carcinogenicity, Category 2 | H351: Suspected of causing cancer. |
| Reproductive toxicity, Category 2 | H361: Suspected of damaging fertility or the unborn child. |

### GHS Label element

Hazard pictograms :



Signal Word : Warning

Hazard Statements : H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H341 Suspected of causing genetic defects.
H351 Suspected of causing cancer.
H361 Suspected of damaging fertility or the unborn child.

Precautionary Statements : **Prevention:**
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.

P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.
P264 Wash skin thoroughly after handling.
P272 Contaminated work clothing should not be allowed out of the workplace.
P280 Wear eye protection/ face protection.
P280 Wear protective gloves.
P281 Use personal protective equipment as required.
**Response:**
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P337 + P313 If eye irritation persists: Get medical advice/ attention.
P362 Take off contaminated clothing and wash before reuse.
**Storage:**
P405 Store locked up.
**Disposal:**
P501 Dispose of contents/ container to an approved waste disposal plant.

Warning : Reports have associated repeated and prolonged exposure to some of the chemicals in this product with permanent brain,liver, kidney and nervous system damage. Intentional misuse by deliberate concentration and inhalation of vapors may be harmful or fatal.

See Section 11 for more detailed information on health effects and symptoms.

## 3. Composition/information on ingredients

**Hazardous ingredients**

| Chemical Name | CAS-No. | Concentration (%) |
|---|---|---|
| bisphenol-A-(epichlorhydrin) epoxy resin | 25068-38-6 | >= 50 - <= 100 % |
| Phenol, 4-nonyl, branched | 84852-15-3 | >= 5 - < 10 % |
| 2,3-epoxypropyl o-tolyl ether | 2210-79-9 | >= 2 - < 5 % |
| solvent naphtha (petroleum), heavy arom. | 64742-94-5 | >= 1 - < 2 % |
| Naphthalene, pure | 91-20-3 | >= 0 - < 1 % |

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.

## 4. First aid measures

If inhaled : Move to fresh air.
Consult a physician after significant exposure.

| | | |
|---|---|---|
| In case of skin contact | : | Take off contaminated clothing and shoes immediately.<br>Wash off with soap and plenty of water.<br>If symptoms persist, call a physician. |
| In case of eye contact | : | Immediately flush eye(s) with plenty of water.<br>Remove contact lenses.<br>Keep eye wide open while rinsing.<br>If eye irritation persists, consult a specialist. |
| If swallowed | : | Clean mouth with water and drink afterwards plenty of water.<br>Induce vomiting immediately and call a physician.<br>Do NOT induce vomiting.<br>Do not give milk or alcoholic beverages.<br>Never give anything by mouth to an unconscious person. |
| Most important symptoms and effects, both acute and delayed | : | irritant effects<br>sensitizing effects<br><br>Allergic reactions<br>Excessive lachrymation<br>Erythema<br>Dermatitis<br>See Section 11 for more detailed information on health effects and symptoms. |
| Protection of first-aiders | : | Move out of dangerous area.<br>Consult a physician.<br>Show this material safety data sheet to the doctor in attendance. |
| Notes to physician | : | Treat symptomatically. |

## 5. Fire-fighting measures

| | | |
|---|---|---|
| Suitable extinguishing media | : | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. |
| Specific extinguishing methods | : | Collect contaminated fire extinguishing water separately. This must not be discharged into drains.<br>Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. |
| Special protective equipment for fire-fighters | : | In the event of fire, wear self-contained breathing apparatus. |

## 6. Accidental release measures

| | | |
|---|---|---|
| Personal precautions, protective equipment and emergency procedures | : | Use personal protective equipment.<br>Deny access to unprotected persons. |
| Environmental precautions | : | Do not flush into surface water or sanitary sewer system.<br>If the product contaminates rivers and lakes or drains inform respective authorities.<br>Local authorities should be advised if significant spillages |

cannot be contained.

Methods and materials for containment and cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
Keep in suitable, closed containers for disposal.

## 7. Handling and storage

Advice on safe handling : Do not breathe vapors or spray mist.
Avoid exceeding the given occupational exposure limits (see section 8).
Do not get in eyes, on skin, or on clothing.
For personal protection see section 8.
Persons with a history of skin sensitization problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.
Smoking, eating and drinking should be prohibited in the application area.
Follow standard hygiene measures when handling chemical products.

Conditions for safe storage : Store in original container.
Keep container tightly closed in a dry and well-ventilated place.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Observe label precautions.
Store in accordance with local regulations.

Materials to avoid : no data available

## 8. Exposure controls/personal protection

| Component | CAS-No. | Basis ** | Value | Exposure limit(s)* / Form of exposure |
|---|---|---|---|---|
| Naphthalene, pure | 91-20-3 | ACGIH | TWA | 10 ppm |
| | | ACGIH | STEL | 15 ppm |
| | | OSHA Z-1 | TWA | 10 ppm<br>50 mg/m3 |
| | | OSHA P0 | TWA | 10 ppm<br>50 mg/m3 |
| | | OSHA P0 | STEL | 15 ppm<br>75 mg/m3 |

*The above mentioned values are in accordance with the legislation in effect at the date of the release of this safety data sheet.

****Basis**
ACGIH. Threshold Limit Values (TLV)
OSHA P0. Table Z-1, Limit for Air Contaminat (1989 Vacated Values)
OSHA P1. Permissible Exposure Limits (PEL), Table Z-1, Limit for Air Contaminant
OSHA P2. Permissible Exposure Limits (PEL), Table Z-2
OSHA Z3. Table Z-3, Mineral Dust

**Engineering measures** : Use of adequate ventilation should be sufficient to control worker exposure to airborne contaminants. If the use of this product generates dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

**Personal protective equipment**

Respiratory protection : Use a properly fitted NIOSH approved air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.

The filter class for the respirator must be suitable for the maximum expected contaminant concentration (gas/vapor/aerosol/particulates) that may arise when handling the product. If this concentration is exceeded, self-contained breathing apparatus must be used.

Hand protection
Remarks : 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.

Eye protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary.

Skin and body protection : Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.

Hygiene measures : Avoid contact with skin, eyes and clothing.
Wash hands before breaks and immediately after handling the product.
Remove contaminated clothing and protective equipment before entering eating areas.
Wash thoroughly after handling.

## 9. Physical and chemical properties

Appearance : liquid

| | | |
|---|---|---|
| Color | : | clear |
| | : | straw-like |
| Odor | : | aromatic |
| Odor Threshold | : | no data available |
| Flash point | : | > 212 °F (> 100 °C) |
| Ignition temperature | : | not applicable |
| Decomposition temperature | : | no data available |
| Lower explosion limit (Vol%) | : | no data available |
| Upper explosion limit (Vol%) | : | no data available |
| Flammability (solid, gas) | : | no data available |
| Oxidizing properties | : | no data available |
| Autoignition temperature | : | no data available |
| pH | : | no data available |
| Melting point/range / Freezing point | : | no data available |
| Boiling point/boiling range | : | no data available |
| Vapor pressure | : | no data available |
| Density | : | 1.14 g/cm3<br>at 68 °F (20 °C) |
| Water solubility | : | Note: insoluble |
| Partition coefficient: n-octanol/water | : | no data available |
| Viscosity, dynamic | : | no data available |
| Viscosity, kinematic | : | > 20.5 mm2/s<br>at 104 °F (40 °C) |
| Relative vapor density | : | no data available |
| Evaporation rate | : | no data available |
| Burning rate | : | no data available |
| Volatile organic compounds (VOC) content | : | 35 g/L (Sikadur®-32 Hi-Mod Part A + Sikadur®-32 Hi-Mod Part B);<br>55 g/L(Sikadur®-32 Hi-Mod Part A + Sikadur®-32 Hi-Mod LPL Part B) |

## 10. Stability and reactivity

| | | |
|---|---|---|
| Reactivity | : | No dangerous reaction known under conditions of normal use. |

| | | |
|---|---|---|
| Chemical stability | : | The product is chemically stable. |
| Possibility of hazardous reactions | : | Stable under recommended storage conditions. |
| Conditions to avoid | : | no data available |
| Incompatible materials | : | no data available |

## 11. Toxicological information

### Acute toxicity

**Product**

| | | |
|---|---|---|
| Acute oral toxicity | : | no data available |
| Acute inhalation toxicity | : | no data available |
| Acute dermal toxicity | : | no data available |

**Ingredients:**

**bisphenol-A-(epichlorhydrin) epoxy resin :**

| | | |
|---|---|---|
| Acute oral toxicity | : | LD50 Oral rat: > 5,000 mg/kg |
| Acute dermal toxicity | : | LD50 Dermal rabbit: > 20,000 mg/kg |

**Phenol, 4-nonyl, branched :**

| | | |
|---|---|---|
| Acute dermal toxicity | : | LD50 Dermal rabbit: 3,160 mg/kg |

### Skin corrosion/irritation

**Product**

Result: Skin irritation

Causes skin irritation.

### Serious eye damage/eye irritation

**Product**

Result: Eye irritation
no data available

Causes serious eye irritation.

### Respiratory or skin sensitization

**Product**

May cause an allergic skin reaction.

**Germ cell mutagenicity**

**Product**

Mutagenicity : Suspected of causing genetic defects.

**Carcinogenicity**

**Product**

Carcinogenicity : Suspected of causing cancer.

| | | |
|---|---|---|
| **IARC** | Group 2B: Possibly carcinogenic to humans | |
| | Naphthalene, pure | 91-20-3 |
| **NTP** | Reasonably anticipated to be a human carcinogen | |
| | Naphthalene, pure | 91-20-3 |

**Reproductive Toxicity/Fertility**

**Product**

Reproductive toxicity : Suspected of damaging fertility or the unborn child.

**Reproductive Toxicity/Development/Teratogenicity**

**Product**

Teratogenicity : no data available

**STOT-single exposure**

**Product**

Assessment: no data available

**STOT-repeated exposure**

Reports have associated repeated and prolonged exposure to some of the chemicals in this product with permanent brain,liver, kidney and nervous system damage. Intentional misuse by deliberate concentration and inhalation of vapors may be harmful or fatal.
Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

**Product**

Assessment: no data available

**Aspiration toxicity**

**Product**

no data available

## 12. Ecological information

Other information: Do not empty into drains; dispose of this material and its container in a safe way.
Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Do not empty into drains; dispose of this material and its container in a safe way.
Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.
Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
May be harmful to the environment if released in large quantities.
Water polluting material.

## 13. Disposal considerations

**Disposal methods**

| | | |
|---|---|---|
| Waste from residues | : | 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. |
| Contaminated packaging | : | Empty containers should be taken to an approved waste handling site for recycling or disposal. |

## 14. Transport information

**DOT**
Not regulated

**IATA**

| | |
|---|---|
| UN number | 3082 |
| Description of the goods | Environmentally hazardous substance, liquid, n.o.s. (bisphenol-A-(epichlorhydrin) epoxy resin) |
| Class | 9 |
| Packing group | III |
| Labels | 9 |
| Packing instruction (cargo aircraft) | 964 |
| Packing instruction (passenger aircraft) | 964 |
| Packing instruction (passenger aircraft) | Y964 |

**IMDG**

| | |
|---|---|
| UN number | 3082 |
| Description of the goods | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (bisphenol-A-(epichlorhydrin) epoxy resin) |
| Class | 9 |
| Packing group | III |
| Labels | 9 |
| EmS Number 1 | F-A |
| EmS Number 2 | S-F |

Marine pollutant yes

IMDG: For Limited Quantity special provisions reference IMDG Code Chapter 3.4

**Special precautions for user**
no data available

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**
not applicable

## 15. Regulatory information

**TSCA list** : All chemical substances in this product are either listed on the TSCA Inventory or are in compliance with a TSCA Inventory exemption.

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

**CERCLA Reportable Quantity**
This material does not contain any components with a CERCLA RQ.

**SARA304 Reportable Quantity**
This material does not contain any components with a section 304 EHS RQ.

**SARA 311/312 Hazards** : Chronic Health Hazard
Acute Health Hazard

**SARA 302** : Not listed

**SARA 313** : Not listed

**Clean Air Act**

**Ozone-Depletion Potential** This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 12 (40 CFR 61).
This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

**California Prop 65** WARNING! This product contains a chemical known in the State of California to cause cancer.

## 16. Other information

**HMIS Classification**

| | | |
|---|---|---|
| **Health** | * | 2 |
| **Flammability** | | 1 |
| **Physical Hazard** | | 0 |
| **Personal Protection** | | X |

**Caution:** HMIS® rating is based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® rating is not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® rating is to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). Please note HMIS® attempts to convey full health warning information to all employees.

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**Notes to Reader**

The information contained in this Safety Data Sheet applies only to the actual Sika Corporation ("Sika") product identified and described herein. This information is not intended to address, nor does it address the use or application of the identified Sika product in combination with any other material, product or process. All of the information set forth herein is based on technical data regarding the identified product that Sika believes to be reliable as of the date hereof. Prior to each use of any Sika product, the user must always read and follow the warnings and instructions on the product's current Product Data Sheet, product label and Safety Data Sheet for each Sika product, which are available at web site and/or telephone number listed in Section 1 of this SDS.

SIKA MAKES NO WARRANTIES EXPRESS OR IMPLIED AND ASSUMES NO LIABILITY ARISING FROM THIS INFORMATION OR ITS USE. SIKA SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES AND SHALL NOT BE RESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHTS HELD BY OTHERS.

All sales of Sika products are subject to its current terms and conditions of sale available at www.sikausa.com or 201-933-8800.

Revision Date 05/29/2014

Material number: 459772

## 1. Identification

| | | |
|---|---|---|
| Product name | : | Sikadur®-32 Hi-Mod Part B |
| Supplier | : | Sika Corporation |
| Address | : | 201 Polito Avenue<br>Lyndhurst, NJ 07071<br>USA<br>www.sikausa.com |
| Telephone | : | (201) 933-8800 |
| Telefax | : | (201) 804-1076 |
| Emergency telephone | : | CHEMTREC: 800-424-9300<br>INTERNATIONAL: 703-527-3887<br>ehs@sika-corp.com |
| Recommended use of the chemical and restrictions on use | : | For further information, refer to the product technical data sheet. |

## 2. Hazards identification

### GHS Classification

| | |
|---|---|
| Skin corrosion, Category 1B | H314: Causes severe skin burns and eye damage. |
| Serious eye damage, Category 1 | H318: Causes serious eye damage. |
| Skin sensitization, Category 1 | H317: May cause an allergic skin reaction. |
| Carcinogenicity, Category 1A | H350: May cause cancer. |
| Reproductive toxicity, Category 2 | H361: Suspected of damaging fertility or the unborn child. |

### GHS Label element

Hazard pictograms :



Signal Word : Danger

Hazard Statements : H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
H350 May cause cancer.
H361 Suspected of damaging fertility or the unborn child.

Precautionary Statements : **Prevention:**
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P260 Do not breathe dust or mist.
P272 Contaminated work clothing should not be allowed out of the workplace.

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P281 Use personal protective equipment as required.
**Response:**
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P310 Immediately call a POISON CENTER or doctor/ physician.
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P363 Wash contaminated clothing before reuse.
**Storage:**
P405 Store locked up.
**Disposal:**
P501 Dispose of contents/ container to an approved waste disposal plant.

Warning : Reports have associated repeated and prolonged exposure to some of the chemicals in this product with permanent brain,liver, kidney and nervous system damage. Intentional misuse by deliberate concentration and inhalation of vapors may be harmful or fatal.

See Section 11 for more detailed information on health effects and symptoms.

## 3. Composition/information on ingredients

**Hazardous ingredients**

| Chemical Name | CAS-No. | Concentration (%) |
|---|---|---|
| Quartz (SiO2) | 14808-60-7 | >= 50 - <= 100 % |
| Phenol, 4-nonyl, branched | 84852-15-3 | >= 5 - < 10 % |
| Isophoronediamine | 2855-13-2 | >= 5 - < 10 % |
| 2-piperazin-1-ylethylamine | 140-31-8 | >= 2 - < 5 % |
| solvent naphtha (petroleum), heavy arom. | 64742-94-5 | >= 1 - < 2 % |
| 2,4,6-tris(dimethylaminomethyl)phenol | 90-72-2 | >= 1 - < 2 % |
| Benzyl alcohol | 100-51-6 | >= 1 - < 2 % |
| 3,6-dioxaoctamethylenediamine | 929-59-9 | >= 1 - < 2 % |
| titanium dioxide | 13463-67-7 | >= 0 - < 1 % |
| Quartz (SiO2) <5µm | 14808-60-7 | >= 0 - < 1 % |
| Naphthalene, pure | 91-20-3 | >= 0 - < 1 % |

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.

## 4. First aid measures

| | | |
|---|---|---|
| If inhaled | : | Move to fresh air.<br>Consult a physician after significant exposure. |
| In case of skin contact | : | Take off contaminated clothing and shoes immediately.<br>Wash off with soap and plenty of water.<br>Immediate medical treatment is necessary as untreated wounds from corrosion of the skin heal slowly and with difficulty. |
| In case of eye contact | : | Small amounts splashed into eyes can cause irreversible tissue damage and blindness.<br>In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.<br>Continue rinsing eyes during transport to hospital.<br>Remove contact lenses.<br>Keep eye wide open while rinsing. |
| If swallowed | : | Clean mouth with water and drink afterwards plenty of water.<br>Do NOT induce vomiting.<br>Do not give milk or alcoholic beverages.<br>Never give anything by mouth to an unconscious person.<br>Take victim immediately to hospital. |
| Most important symptoms and effects, both acute and delayed | : | Health injuries may be delayed.<br>corrosive effects<br>sensitizing effects<br>carcinogenic effects<br><br>Allergic reactions<br>Dermatitis<br>See Section 11 for more detailed information on health effects and symptoms. |
| Protection of first-aiders | : | Move out of dangerous area.<br>Consult a physician.<br>Show this material safety data sheet to the doctor in attendance. |
| Notes to physician | : | Treat symptomatically. |

## 5. Fire-fighting measures

| | | |
|---|---|---|
| Suitable extinguishing media | : | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. |
| Specific extinguishing methods | : | Collect contaminated fire extinguishing water separately. This must not be discharged into drains.<br>Fire residues and contaminated fire extinguishing water must |

be disposed of in accordance with local regulations.

Special protective equipment for fire-fighters : In the event of fire, wear self-contained breathing apparatus.

## 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.
Deny access to unprotected persons.

Environmental precautions : Do not flush into surface water or sanitary sewer system.
If the product contaminates rivers and lakes or drains inform respective authorities.
Local authorities should be advised if significant spillages cannot be contained.

Methods and materials for containment and cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
Keep in suitable, closed containers for disposal.

## 7. Handling and storage

Advice on safe handling : Avoid exceeding the given occupational exposure limits (see section 8).
Do not get in eyes, on skin, or on clothing.
For personal protection see section 8.
Persons with a history of skin sensitization problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.
Smoking, eating and drinking should be prohibited in the application area.
Follow standard hygiene measures when handling chemical products.

Conditions for safe storage : Prevent unauthorized access.
Store in original container.
Keep container tightly closed in a dry and well-ventilated place.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Observe label precautions.
Store in accordance with local regulations.

Materials to avoid : no data available

## 8. Exposure controls/personal protection

| Component | CAS-No. | Basis ** | Value | Exposure limit(s)* / Form of exposure |
|---|---|---|---|---|
| Naphthalene, pure | 91-20-3 | ACGIH | TWA | 10 ppm |
| | | ACGIH | STEL | 15 ppm |

| | | | | |
|---|---|---|---|---|
| | | | | |
| | | OSHA Z-1 | TWA | 10 ppm<br>50 mg/m3 |
| | | OSHA P0 | TWA | 10 ppm<br>50 mg/m3 |
| | | OSHA P0 | STEL | 15 ppm<br>75 mg/m3 |

*The above mentioned values are in accordance with the legislation in effect at the date of the release of this safety data sheet.

**__Basis__
ACGIH. Threshold Limit Values (TLV)
OSHA P0. Table Z-1, Limit for Air Contaminat (1989 Vacated Values)
OSHA P1. Permissible Exposure Limits (PEL), Table Z-1, Limit for Air Contaminant
OSHA P2. Permissible Exposure Limits (PEL), Table Z-2
OSHA Z3. Table Z-3, Mineral Dust

**Engineering measures** : Use of adequate ventilation should be sufficient to control worker exposure to airborne contaminants. If the use of this product generates dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

**Personal protective equipment**

Respiratory protection : Use a properly fitted NIOSH approved air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.

The filter class for the respirator must be suitable for the maximum expected contaminant concentration (gas/vapor/aerosol/particulates) that may arise when handling the product. If this concentration is exceeded, self-contained breathing apparatus must be used.

Hand protection
Remarks : 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.

Eye protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary.

Skin and body protection : Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.

Hygiene measures : Avoid contact with skin, eyes and clothing.
Wash hands before breaks and immediately after handling the

product.
Remove contaminated clothing and protective equipment before entering eating areas.
Wash thoroughly after handling.

## 9. Physical and chemical properties

| | | |
|---|---|---|
| Appearance | : | liquid |
| Color | : | gray |
| Odor | : | amine-like |
| Odor Threshold | : | no data available |
| Flash point | : | > 212 °F (> 100 °C) |
| Ignition temperature | : | not applicable |
| Decomposition temperature | : | no data available |
| Lower explosion limit (Vol%) | : | no data available |
| Upper explosion limit (Vol%) | : | no data available |
| Flammability (solid, gas) | : | no data available |
| Oxidizing properties | : | no data available |
| Autoignition temperature | : | no data available |
| pH | : | no data available |
| Melting point/range / Freezing point | : | no data available |
| Boiling point/boiling range | : | no data available |
| Vapor pressure | : | no data available |
| Density | : | 1.7 g/cm3<br>at 68 °F (20 °C) |
| Water solubility | : | Note: slightly soluble |
| Partition coefficient: n-octanol/water | : | no data available |
| Viscosity, dynamic | : | no data available |
| Viscosity, kinematic | : | > 20.5 mm2/s<br>at 104 °F (40 °C) |
| Relative vapor density | : | no data available |
| Evaporation rate | : | no data available |
| Burning rate | : | no data available |

| | | |
|---|---|---|
| Volatile organic compounds (VOC) content | : | 35 g/l<br>A+B Combined |

## 10. Stability and reactivity

| | | |
|---|---|---|
| Reactivity | : | No dangerous reaction known under conditions of normal use. |
| Chemical stability | : | The product is chemically stable. |
| Possibility of hazardous reactions | : | Stable under recommended storage conditions. |
| Conditions to avoid | : | no data available |
| Incompatible materials | : | no data available |

## 11. Toxicological information

**Acute toxicity**

**Product**

| | | |
|---|---|---|
| Acute oral toxicity | : | no data available |
| Acute inhalation toxicity | : | no data available |
| Acute dermal toxicity | : | no data available |

**Ingredients:**

**Phenol, 4-nonyl, branched :**

| | | |
|---|---|---|
| Acute dermal toxicity | : | LD50 Dermal rabbit: 3,160 mg/kg |

**Isophoronediamine :**

| | | |
|---|---|---|
| Acute oral toxicity | : | LD50 Oral rat: 1,030 mg/kg |

**2-piperazin-1-ylethylamine :**

| | | |
|---|---|---|
| Acute oral toxicity | : | LD50 Oral rabbit: ca. 2,097 mg/kg |
| Acute dermal toxicity | : | LD50 Dermal rabbit: ca. 866 mg/kg |

**Benzyl alcohol :**

| | | |
|---|---|---|
| Acute oral toxicity | : | LD50 Oral rat: 1,230 mg/kg |
| Acute inhalation toxicity | : | LC50 rat: 4.178 mg/l<br>Exposure time: 4 h<br>Test atmosphere: dust/mist |

**Skin corrosion/irritation**

**Product**

Causes severe skin burns and eye damage.

**Serious eye damage/eye irritation**

**Product**

no data available

**Respiratory or skin sensitization**

**Product**

May cause an allergic skin reaction.

**Germ cell mutagenicity**

**Product**

Mutagenicity : no data available

**Carcinogenicity**

**Product**

Carcinogenicity : May cause cancer by inhalation., Suspected of causing cancer.

| | | |
|---|---|---|
| **IARC** | Group 1: Carcinogenic to humans | |
| | Quartz (SiO2) | 14808-60-7 |
| | Quartz (SiO2) <5µm | 14808-60-7 |
| | Group 2B: Possibly carcinogenic to humans | |
| | titanium dioxide | 13463-67-7 |
| | Naphthalene, pure | 91-20-3 |
| **NTP** | Known to be human carcinogen | |
| | Quartz (SiO2) | 14808-60-7 |
| | Quartz (SiO2) <5µm | 14808-60-7 |
| | Reasonably anticipated to be a human carcinogen | |
| | Naphthalene, pure | 91-20-3 |

**Reproductive Toxicity/Fertility**

**Product**

Reproductive toxicity : Suspected of damaging fertility or the unborn child.

**Reproductive Toxicity/Development/Teratogenicity**

**Product**

Teratogenicity : no data available

**STOT-single exposure**

**Product**

Assessment: no data available

**STOT-repeated exposure**

Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Reports have associated repeated and prolonged exposure to some of the chemicals in this product with permanent brain,liver, kidney and nervous system damage. Intentional misuse by deliberate concentration and inhalation of vapors may be harmful or fatal.

**Product**

Assessment: no data available

**Aspiration toxicity**

**Product**

no data available

## 12. Ecological information

Other information

Do not empty into drains; dispose of this material and its container in a safe way.
Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.
Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
May be harmful to the environment if released in large quantities.
Water polluting material.

**Component:**

| | | |
|---|---|---|
| 2-piperazin-1-ylethylamine | 140-31-8 | Toxicity to fish:<br>LC50<br>Species: Fish<br>Dose: > 100 mg/l<br>Exposure time: 96 h |

## 13. Disposal considerations

**Disposal methods**

Waste from residues : 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.

Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.

## 14. Transport information

**DOT**

UN number 3267

| | |
|---|---|
| Description of the goods | Corrosive liquid, basic, organic, n.o.s. (Phenol, 4-nonyl, branched, Isophoronediamine) |
| Class | 8 |
| Packing group | III |
| Labels | 8 |
| Emergency Response Guidebook Number | 153 |

**IATA**

| | |
|---|---|
| UN number | 3267 |
| Description of the goods | Corrosive liquid, basic, organic, n.o.s. (Phenol, 4-nonyl, branched, Isophoronediamine) |
| Class | 8 |
| Packing group | III |
| Labels | 8 |
| Packing instruction (cargo aircraft) | 856 |
| Packing instruction (passenger aircraft) | 852 |
| Packing instruction (passenger aircraft) | Y841 |

**IMDG**

| | |
|---|---|
| UN number | 3267 |
| Description of the goods | CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S. (Phenol, 4-nonyl, branched, Isophoronediamine) |
| Class | 8 |
| Packing group | III |
| Labels | 8 |
| EmS Number 1 | F-A |
| EmS Number 2 | S-B |
| Marine pollutant | yes |

DOT: For Limited Quantity exceptions reference 49 CFR 173.154 (b)
IMDG: For Limited Quantity special provisions reference IMDG Code Chapter 3.4

**Special precautions for user**
no data available

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**
not applicable

## 15. Regulatory information

**TSCA list** : All chemical substances in this product are either listed on the TSCA Inventory or are in compliance with a TSCA Inventory exemption.

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

**CERCLA Reportable Quantity**

This material does not contain any components with a CERCLA RQ.

**SARA304 Reportable Quantity**

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

**SARA 311/312 Hazards** : Acute Health Hazard
Chronic Health Hazard

**SARA 302** : SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**SARA 313** : SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**Clean Air Act**

**Ozone-Depletion Potential** This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 12 (40 CFR 61).
This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

**California Prop 65** WARNING! This product contains a chemical known in the State of California to cause cancer.

## 16. Other information

**HMIS Classification**

| | | |
|---|---|---|
| Health | * | 3 |
| Flammability | | 1 |
| Physical Hazard | | 0 |
| Personal Protection | | X |

**Caution:** HMIS® rating is based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® rating is not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® rating is to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). Please note HMIS® attempts to convey full health warning information to all employees.

**Notes to Reader**

The information contained in this Safety Data Sheet applies only to the actual Sika Corporation ("Sika") product identified and described herein. This information is not intended to address, nor does it address the use or application of the identified Sika product in

combination with any other material, product or process. All of the information set forth herein is based on technical data regarding the identified product that Sika believes to be reliable as of the date hereof. Prior to each use of any Sika product, the user must always read and follow the warnings and instructions on the product's current Product Data Sheet, product label and Safety Data Sheet for each Sika product, which are available at web site and/or telephone number listed in Section 1 of this SDS.

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All sales of Sika products are subject to its current terms and conditions of sale available at www.sikausa.com or 201-933-8800.

Revision Date 05/29/2014

Material number: 459773

## 1. Identification

| | | |
|---|---|---|
| Product name | : | Sikadur®-33 Part A |
| Supplier | : | Sika Corporation |
| Address | : | 201 Polito Avenue<br>Lyndhurst, NJ 07071<br>USA<br>www.sikausa.com |
| Telephone | : | (201) 933-8800 |
| Telefax | : | (201) 804-1076 |
| Emergency telephone | : | CHEMTREC: 800-424-9300<br>INTERNATIONAL: 703-527-3887<br>ehs@sika-corp.com |
| Recommended use of the chemical and restrictions on use | : | For further information, refer to the product technical data sheet. |

## 2. Hazards identification

### GHS Classification

| | |
|---|---|
| Skin irritation , Category 2 | H315: Causes skin irritation. |
| Eye irritation , Category 2A | H319: Causes serious eye irritation. |
| Skin sensitization , Category 1 | H317: May cause an allergic skin reaction. |
| Carcinogenicity , Category 1A | H350: May cause cancer. |

### GHS Label element

Hazard pictograms :



Signal Word : Danger

Hazard Statements : H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H350 May cause cancer.

Precautionary Statements : **Prevention:**
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.
P264 Wash skin thoroughly after handling.
P272 Contaminated work clothing should not be allowed out of the workplace.
P280 Wear eye protection/ face protection.

P280 Wear protective gloves.
P281 Use personal protective equipment as required.
**Response:**
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P337 + P313 If eye irritation persists: Get medical advice/ attention.
P362 Take off contaminated clothing and wash before reuse.
**Storage:**
P405 Store locked up.
**Disposal:**
P501 Dispose of contents/ container to an approved waste disposal plant.

See Section 11 for more detailed information on health effects and symptoms.

## 3. Composition/information on ingredients

**Hazardous ingredients**

| Chemical Name | CAS-No. | Concentration (%) |
|---|---|---|
| bisphenol-A-(epichlorhydrin) epoxy resin | 25068-38-6 | >= 25 - < 50 % |
| 1,3-bis(2,3-epoxypropoxy)-2,2-dimethylpropane | 17557-23-2 | >= 2 - < 5 % |
| titanium dioxide | 13463-67-7 | >= 0 - < 1 % |
| Quartz (SiO2) | 14808-60-7 | >= 0 - < 1 % |

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.

## 4. First aid measures

If inhaled : Move to fresh air.
Consult a physician after significant exposure.

In case of skin contact : Take off contaminated clothing and shoes immediately.
Wash off with soap and plenty of water.
If symptoms persist, call a physician.

In case of eye contact : Immediately flush eye(s) with plenty of water.
Remove contact lenses.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.

If swallowed : Clean mouth with water and drink afterwards plenty of water.

| | | |
|---|---|---|
| | | Induce vomiting immediately and call a physician.<br>Do NOT induce vomiting.<br>Do not give milk or alcoholic beverages.<br>Never give anything by mouth to an unconscious person. |
| Most important symptoms and effects, both acute and delayed | : | Allergic reactions<br>Excessive lachrymation<br>Erythema<br>Dermatitis<br>See Section 11 for more detailed information on health effects and symptoms.<br><br>irritant effects<br>sensitizing effects<br>carcinogenic effects |
| Protection of first-aiders | : | Move out of dangerous area.<br>Consult a physician.<br>Show this material safety data sheet to the doctor in attendance. |
| Notes to physician | : | Treat symptomatically. |

## 5. Fire-fighting measures

| | | |
|---|---|---|
| Suitable extinguishing media | : | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. |
| Specific extinguishing methods | : | Collect contaminated fire extinguishing water separately. This must not be discharged into drains.<br>Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. |
| Special protective equipment for fire-fighters | : | In the event of fire, wear self-contained breathing apparatus. |

## 6. Accidental release measures

| | | |
|---|---|---|
| Personal precautions, protective equipment and emergency procedures | : | Use personal protective equipment.<br>Deny access to unprotected persons. |
| Environmental precautions | : | Do not flush into surface water or sanitary sewer system.<br>If the product contaminates rivers and lakes or drains inform respective authorities.<br>Local authorities should be advised if significant spillages cannot be contained. |
| Methods and materials for containment and cleaning up | : | Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).<br>Keep in suitable, closed containers for disposal. |

## 7. Handling and storage

Advice on safe handling : Do not breathe vapors or spray mist.
Avoid exceeding the given occupational exposure limits (see section 8).
Do not get in eyes, on skin, or on clothing.
For personal protection see section 8.
Persons with a history of skin sensitization problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.
Smoking, eating and drinking should be prohibited in the application area.
Follow standard hygiene measures when handling chemical products.

Conditions for safe storage : Prevent unauthorized access.
Store in original container.
Keep container tightly closed in a dry and well-ventilated place.
Observe label precautions.
Store in accordance with local regulations.

Materials to avoid : no data available

## 8. Exposure controls/personal protection

| Component | CAS-No. | Basis ** | Value | Exposure limit(s)* / Form of exposure |
|---|---|---|---|---|
| titanium dioxide | 13463-67-7 | ACGIH | TWA | 10 mg/m3 |
| | | OSHA P0 | TWA | 10 mg/m3<br>Total |
| | | OSHA Z-1 | TWA | 15 mg/m3<br>total dust |
| Quartz (SiO2) | 14808-60-7 | ACGIH | TWA | 0.025 mg/m3<br>Respirable fraction |
| | | OSHA Z-3 | TWA | 30 mg/m3 /<br>%SiO2+2<br>total dust |
| | | OSHA Z-3 | TWA | 10 mg/m3 /<br>%SiO2+2<br>respirable |
| | | OSHA Z-3 | TWA | 250 mppcf /<br>%SiO2+5<br>respirable |

| | | | | |
|---|---|---|---|---|
| | | OSHA P0 | TWA | 0.1 mg/m3<br>Respirable fraction |

*The above mentioned values are in accordance with the legislation in effect at the date of the release of this safety data sheet.

**__Basis__
ACGIH. Threshold Limit Values (TLV)
OSHA P0. Table Z-1, Limit for Air Contaminat (1989 Vacated Values)
OSHA P1. Permissible Exposure Limits (PEL), Table Z-1, Limit for Air Contaminant
OSHA P2. Permissible Exposure Limits (PEL), Table Z-2
OSHA Z3. Table Z-3, Mineral Dust

**Engineering measures** : Use of adequate ventilation should be sufficient to control worker exposure to airborne contaminants. If the use of this product generates dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

**Personal protective equipment**

Respiratory protection : Use a properly fitted NIOSH approved air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.

The filter class for the respirator must be suitable for the maximum expected contaminant concentration (gas/vapor/aerosol/particulates) that may arise when handling the product. If this concentration is exceeded, self-contained breathing apparatus must be used.

Hand protection
Remarks : 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.

Eye protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary.

Skin and body protection : Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.

Hygiene measures : Avoid contact with skin, eyes and clothing.
Wash hands before breaks and immediately after handling the product.
Remove contaminated clothing and protective equipment before entering eating areas.
Wash thoroughly after handling.

## 9. Physical and chemical properties

| | | |
|---|---|---|
| Appearance | : | paste |
| Color | : | light gray |
| Odor | : | aromatic |
| Odor Threshold | : | no data available |
| Flash point | : | > 212 °F (> 100 °C) |
| Ignition temperature | : | not applicable |
| Decomposition temperature | : | no data available |
| Lower explosion limit (Vol%) | : | no data available |
| Upper explosion limit (Vol%) | : | no data available |
| Flammability (solid, gas) | : | no data available |
| Oxidizing properties | : | no data available |
| Autoignition temperature | : | no data available |
| pH | : | no data available |
| Melting point/range / Freezing point | : | no data available |
| Boiling point/boiling range | : | no data available |
| Vapor pressure | : | no data available |
| Density | : | ca.1.84 g/cm3<br>at 73 °F (23 °C) |
| Water solubility | : | Note: insoluble |
| Partition coefficient: n-octanol/water | : | no data available |
| Viscosity, dynamic | : | no data available |
| Viscosity, kinematic | : | ca.> 20.5 mm2/s<br>at 104 °F (40 °C) |
| Relative vapor density | : | no data available |
| Evaporation rate | : | no data available |
| Burning rate | : | no data available |
| Volatile organic compounds (VOC) content | : | 3 g/l<br>A+B Combined |

## 10. Stability and reactivity

| | | |
|---|---|---|
| Reactivity | : | No dangerous reaction known under conditions of normal use. |
| Chemical stability | : | The product is chemically stable. |
| Possibility of hazardous reactions | : | Stable under recommended storage conditions. |
| Conditions to avoid | : | no data available |
| Incompatible materials | : | no data available |

## 11. Toxicological information

### Acute toxicity

**Product**

| | | |
|---|---|---|
| Acute oral toxicity | : | no data available |
| Acute inhalation toxicity | : | no data available |
| Acute dermal toxicity | : | no data available |

**Ingredients:**

**bisphenol-A-(epichlorhydrin) epoxy resin :**

| | | |
|---|---|---|
| Acute oral toxicity | : | LD50 Oral rat: > 5,000 mg/kg |
| Acute dermal toxicity | : | LD50 Dermal rabbit: > 20,000 mg/kg |

### Skin corrosion/irritation

**Product**

Causes skin irritation.

### Serious eye damage/eye irritation

**Product**

Causes serious eye irritation.

### Respiratory or skin sensitization

**Product**

May cause an allergic skin reaction.

### Germ cell mutagenicity

**Product**

| | | |
|---|---|---|
| Mutagenicity | : | no data available |

**Carcinogenicity**

**Product**

Carcinogenicity : May cause cancer.

| | | |
|---|---|---|
| **IARC** | Group 1: Carcinogenic to humans | |
| | Quartz (SiO2) | 14808-60-7 |
| | Group 2B: Possibly carcinogenic to humans | |
| | titanium dioxide | 13463-67-7 |
| **NTP** | Known to be human carcinogen | |
| | Quartz (SiO2) | 14808-60-7 |

**Reproductive Toxicity/Fertility**

**Product**

Reproductive toxicity : no data available

**Reproductive Toxicity/Development/Teratogenicity**

**Product**

Teratogenicity : no data available

**STOT-single exposure**

**Product**

Assessment: no data available

**STOT-repeated exposure**

Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

**Product**

Assessment: no data available

**Aspiration toxicity**

**Product**

no data available

## 12. Ecological information

Other information

Do not empty into drains; dispose of this material and its container in a safe way.
Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.
Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
May be harmful to the environment if released in large quantities.
Water polluting material.

## 13. Disposal considerations

### Disposal methods

| | | |
|---|---|---|
| Waste from residues | : | 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. |
| Contaminated packaging | : | Empty containers should be taken to an approved waste handling site for recycling or disposal. |

## 14. Transport information

**DOT**
Not regulated

**IATA**

| | |
|---|---|
| UN number | 3082 |
| Description of the goods | Environmentally hazardous substance, liquid, n.o.s. (bisphenol-A-(epichlorhydrin) epoxy resin) |
| Class | 9 |
| Packing group | III |
| Labels | 9 |
| Packing instruction (cargo aircraft) | 964 |
| Packing instruction (passenger aircraft) | 964 |
| Packing instruction (passenger aircraft) | Y964 |

**IMDG**

| | |
|---|---|
| UN number | 3082 |
| Description of the goods | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (bisphenol-A-(epichlorhydrin) epoxy resin) |
| Class | 9 |
| Packing group | III |
| Labels | 9 |
| EmS Number 1 | F-A |
| EmS Number 2 | S-F |
| Marine pollutant | yes |

DOT & Domestic Aircraft: As per 49 CFR 171.4, Non-bulk materials (<119 Gal) are excepted from being classed as a Marine Pollutant.
IMDG: For Limited Quantity special provisions reference IMDG Code Chapter 3.4

**Special precautions for user**
no data available

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**
not applicable

## 15. Regulatory information

**TSCA list** : All chemical substances in this product are either listed on the TSCA Inventory or are in compliance with a TSCA Inventory exemption.

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

**CERCLA Reportable Quantity**
This material does not contain any components with a CERCLA RQ.

**SARA304 Reportable Quantity**
This material does not contain any components with a section 304 EHS RQ.

**SARA 311/312 Hazards** : Acute Health Hazard
Chronic Health Hazard

**SARA 302** : SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**SARA 313** : SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**Clean Air Act**

**Ozone-Depletion Potential** This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 12 (40 CFR 61).
This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

**California Prop 65** WARNING! This product contains a chemical known in the State of California to cause cancer.

## 16. Other information

**HMIS Classification**

| | | |
|---|---|---|
| **Health** | * | 3 |
| **Flammability** | | 1 |
| **Physical Hazard** | | 0 |
| **Personal Protection** | | X |

**Caution:** HMIS® rating is based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® rating is not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® rating is to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). Please note HMIS® attempts to convey full health warning information to all employees.

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**Notes to Reader**

The information contained in this Safety Data Sheet applies only to the actual Sika Corporation ("Sika") product identified and described herein. This information is not intended to address, nor does it address the use or application of the identified Sika product in combination with any other material, product or process. All of the information set forth herein is based on technical data regarding the identified product that Sika believes to be reliable as of the date hereof. Prior to each use of any Sika product, the user must always read and follow the warnings and instructions on the product's current Product Data Sheet, product label and Safety Data Sheet for each Sika product, which are available at web site and/or telephone number listed in Section 1 of this SDS.

SIKA MAKES NO WARRANTIES EXPRESS OR IMPLIED AND ASSUMES NO LIABILITY ARISING FROM THIS INFORMATION OR ITS USE. SIKA SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES AND SHALL NOT BE RESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHTS HELD BY OTHERS.

All sales of Sika products are subject to its current terms and conditions of sale available at www.sikausa.com or 201-933-8800.

Revision Date 10/09/2014

Material number: 188408

## 1. Identification

| | | |
|---|---|---|
| Product name | : | Sikadur®-33 Part B |
| Supplier | : | Sika Corporation |
| Address | : | 201 Polito Avenue<br>Lyndhurst, NJ 07071<br>USA<br>www.sikausa.com |
| Telephone | : | (201) 933-8800 |
| Telefax | : | (201) 804-1076 |
| Emergency telephone | : | CHEMTREC: 800-424-9300<br>INTERNATIONAL: 703-527-3887<br>ehs@sika-corp.com |
| Recommended use of the chemical and restrictions on use | : | For further information, refer to the product technical data sheet. |

## 2. Hazards identification

### GHS Classification

| | |
|---|---|
| Skin irritation, Category 2 | H315: Causes skin irritation. |
| Serious eye damage, Category 1 | H318: Causes serious eye damage. |
| Skin sensitization, Category 1 | H317: May cause an allergic skin reaction. |
| Carcinogenicity, Category 1A | H350: May cause cancer. |

### GHS Label element

Hazard pictograms :



Signal Word : Danger

Hazard Statements : H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H350 May cause cancer.

Precautionary Statements : **Prevention:**
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.
P264 Wash skin thoroughly after handling.
P272 Contaminated work clothing should not be allowed out of the workplace.
P280 Wear eye protection/ face protection.

P280 Wear protective gloves.
P281 Use personal protective equipment as required.
**Response:**
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P310 Immediately call a POISON CENTER or doctor/ physician.
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P362 Take off contaminated clothing and wash before reuse.
**Storage:**
P405 Store locked up.
**Disposal:**
P501 Dispose of contents/ container to an approved waste disposal plant.

See Section 11 for more detailed information on health effects and symptoms.

## 3. Composition/information on ingredients

**Hazardous ingredients**

| Chemical Name | CAS-No. | Concentration (%) |
|---|---|---|
| mercaptan/amin blend (Trade Secret) | | >= 25 - < 50 % |
| 2,4,6-tris(dimethylaminomethyl)phenol | 90-72-2 | >= 2 - < 5 % |
| Quartz (SiO2) | 14808-60-7 | >= 0 - < 1 % |

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.

## 4. First aid measures

If inhaled : Move to fresh air.
Consult a physician after significant exposure.

In case of skin contact : Take off contaminated clothing and shoes immediately.
Wash off with soap and plenty of water.
If symptoms persist, call a physician.

In case of eye contact : Small amounts splashed into eyes can cause irreversible tissue damage and blindness.
In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Continue rinsing eyes during transport to hospital.
Remove contact lenses.
Keep eye wide open while rinsing.

| | | |
|---|---|---|
| If swallowed | : | Clean mouth with water and drink afterwards plenty of water.<br>Induce vomiting immediately and call a physician.<br>Do NOT induce vomiting.<br>Do not give milk or alcoholic beverages.<br>Never give anything by mouth to an unconscious person. |
| Most important symptoms and effects, both acute and delayed | : | irritant effects<br>sensitizing effects<br>carcinogenic effects<br><br>Allergic reactions<br>Excessive lachrymation<br>Erythema<br>Dermatitis<br>See Section 11 for more detailed information on health effects and symptoms. |
| Protection of first-aiders | : | Move out of dangerous area.<br>Consult a physician.<br>Show this material safety data sheet to the doctor in attendance. |
| Notes to physician | : | Treat symptomatically. |

## 5. Fire-fighting measures

| | | |
|---|---|---|
| Suitable extinguishing media | : | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. |
| Specific extinguishing methods | : | Collect contaminated fire extinguishing water separately. This must not be discharged into drains.<br>Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. |
| Special protective equipment for fire-fighters | : | In the event of fire, wear self-contained breathing apparatus. |

## 6. Accidental release measures

| | | |
|---|---|---|
| Personal precautions, protective equipment and emergency procedures | : | Use personal protective equipment.<br>Deny access to unprotected persons. |
| Environmental precautions | : | Do not flush into surface water or sanitary sewer system.<br>If the product contaminates rivers and lakes or drains inform respective authorities.<br>Local authorities should be advised if significant spillages cannot be contained. |
| Methods and materials for containment and cleaning up | : | Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).<br>Keep in suitable, closed containers for disposal. |

## 7. Handling and storage

| | | |
|---|---|---|
| Advice on safe handling | : | Do not breathe vapors or spray mist.<br>Avoid exceeding the given occupational exposure limits (see section 8).<br>Do not get in eyes, on skin, or on clothing.<br>For personal protection see section 8.<br>Persons with a history of skin sensitization problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.<br>Smoking, eating and drinking should be prohibited in the application area.<br>Follow standard hygiene measures when handling chemical products. |
| Conditions for safe storage | : | Prevent unauthorized access.<br>Store in original container.<br>Keep container tightly closed in a dry and well-ventilated place.<br>Observe label precautions.<br>Store in accordance with local regulations. |
| Materials to avoid | : | no data available |

## 8. Exposure controls/personal protection

| Component | CAS-No. | Basis ** | Value | Exposure limit(s)* / Form of exposure |
|---|---|---|---|---|
| Quartz (SiO2) | 14808-60-7 | ACGIH | TWA | 0.025 mg/m3<br>Respirable fraction |
| | | OSHA Z-3 | TWA | 30 mg/m3 /<br>%SiO2+2<br>total dust |
| | | OSHA Z-3 | TWA | 10 mg/m3 /<br>%SiO2+2<br>respirable |
| | | OSHA Z-3 | TWA | 250 mppcf /<br>%SiO2+5<br>respirable |
| | | OSHA P0 | TWA | 0.1 mg/m3<br>Respirable fraction |

*The above mentioned values are in accordance with the legislation in effect at the date of the release of this safety data sheet.

****Basis**
ACGIH. Threshold Limit Values (TLV)
OSHA P0. Table Z-1, Limit for Air Contaminat (1989 Vacated Values)
OSHA P1. Permissible Exposure Limits (PEL), Table Z-1, Limit for Air Contaminant
OSHA P2. Permissible Exposure Limits (PEL), Table Z-2
OSHA Z3. Table Z-3, Mineral Dust

**Engineering measures** : Use of adequate ventilation should be sufficient to control worker exposure to airborne contaminants. If the use of this product generates dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

**Personal protective equipment**

Respiratory protection : Use a properly fitted NIOSH approved air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.

The filter class for the respirator must be suitable for the maximum expected contaminant concentration (gas/vapor/aerosol/particulates) that may arise when handling the product. If this concentration is exceeded, self-contained breathing apparatus must be used.

Hand protection
Remarks : 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.

Eye protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary.

Skin and body protection : Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.

Hygiene measures : Avoid contact with skin, eyes and clothing.
Wash hands before breaks and immediately after handling the product.
Remove contaminated clothing and protective equipment before entering eating areas.
Wash thoroughly after handling.

## 9. Physical and chemical properties

| | | |
|---|---|---|
| Appearance | : | paste |
| Color | : | off-white |
| Odor | : | characteristic |
| Odor Threshold | : | no data available |
| Flash point | : | > 212 °F (> 100 °C) |
| Ignition temperature | : | not applicable |
| Decomposition temperature | : | no data available |
| Lower explosion limit (Vol%) | : | no data available |
| Upper explosion limit (Vol%) | : | no data available |
| Flammability (solid, gas) | : | no data available |
| Oxidizing properties | : | no data available |
| Autoignition temperature | : | no data available |
| pH | : | no data available |
| Melting point/range / Freezing point | : | no data available |
| Boiling point/boiling range | : | no data available |
| Vapor pressure | : | no data available |
| Density | : | 1.5 g/cm3<br>at 73 °F (23 °C) |
| Water solubility | : | Note: dispersible |
| Partition coefficient: n-octanol/water | : | no data available |
| Viscosity, dynamic | : | no data available |
| Viscosity, kinematic | : | ca.> 20.5 mm2/s<br>at 104 °F (40 °C) |
| Relative vapor density | : | no data available |
| Evaporation rate | : | no data available |
| Burning rate | : | no data available |
| Volatile organic compounds (VOC) content | : | 3 g/l<br>A+B Combined |

## 10. Stability and reactivity

| | | |
|---|---|---|
| Reactivity | : | No dangerous reaction known under conditions of normal use. |
| Chemical stability | : | The product is chemically stable. |
| Possibility of hazardous reactions | : | Stable under recommended storage conditions. |
| Conditions to avoid | : | no data available |
| Incompatible materials | : | no data available |

## 11. Toxicological information

### Acute toxicity

**Product**

| | | |
|---|---|---|
| Acute oral toxicity | : | no data available |
| Acute inhalation toxicity | : | no data available |
| Acute dermal toxicity | : | no data available |

### Skin corrosion/irritation

**Product**

Causes skin irritation.

### Serious eye damage/eye irritation

**Product**

Causes serious eye damage.

### Respiratory or skin sensitization

**Product**

May cause an allergic skin reaction.

### Germ cell mutagenicity

**Product**

| | | |
|---|---|---|
| Mutagenicity | : | no data available |

### Carcinogenicity

**Product**

| | | |
|---|---|---|
| Carcinogenicity | : | May cause cancer. |

| | | |
|---|---|---|
| **IARC** | Group 1: Carcinogenic to humans | |
| | Quartz (SiO2) | 14808-60-7 |
| **NTP** | Known to be human carcinogen | |
| | Quartz (SiO2) | 14808-60-7 |

**Reproductive Toxicity/Fertility**

**Product**

Reproductive toxicity : no data available

**Reproductive Toxicity/Development/Teratogenicity**

**Product**

Teratogenicity : no data available

**STOT-single exposure**

**Product**

Assessment: no data available

**STOT-repeated exposure**

Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

**Product**

Assessment: no data available

**Aspiration toxicity**

**Product**

no data available

## 12. Ecological information

Other information: Do not empty into drains; dispose of this material and its container in a safe way.
Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

## 13. Disposal considerations

**Disposal methods**

Waste from residues : 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.

Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.

## 14. Transport information

**DOT**
Not dangerous goods
**IATA**
Not dangerous goods
**IMDG**
Not dangerous goods

**Special precautions for user**
no data available

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**
not applicable

## 15. Regulatory information

**TSCA list** : All chemical substances in this product are either listed on the TSCA Inventory or are in compliance with a TSCA Inventory exemption.

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

**CERCLA Reportable Quantity**
This material does not contain any components with a CERCLA RQ.

**SARA304 Reportable Quantity**
This material does not contain any components with a section 304 EHS RQ.

**SARA 311/312 Hazards** : Acute Health Hazard
Chronic Health Hazard

**SARA 302** : SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**SARA 313** : SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**Clean Air Act**

**Ozone-Depletion Potential** This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 12 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

**California Prop 65** WARNING! This product contains a chemical known in the State of California to cause cancer.

## 16. Other information

**HMIS Classification**

| | | |
|---|---|---|
| **Health** | * | 3 |
| **Flammability** | | 1 |
| **Physical Hazard** | | 0 |
| **Personal Protection** | | X |

**Caution:** HMIS® rating is based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® rating is not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® rating is to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). Please note HMIS® attempts to convey full health warning information to all employees.

**Notes to Reader**

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All sales of Sika products are subject to its current terms and conditions of sale available at www.sikausa.com or 201-933-8800.

Revision Date 10/09/2014

Material number: 188409

## 1. Identification

| | | |
|---|---|---|
| Product name | : | Sikaflex®-1A |
| Supplier | : | Sika Corporation |
| Address | : | 201 Polito Avenue<br>Lyndhurst, NJ 07071<br>USA<br>www.sikausa.com |
| Telephone | : | (201) 933-8800 |
| Telefax | : | (201) 804-1076 |
| Emergency telephone | : | CHEMTREC: 800-424-9300<br>INTERNATIONAL: 703-527-3887<br>ehs@sika-corp.com |
| Recommended use of the chemical and restrictions on use | : | For further information, refer to the product technical data sheet. |

## 2. Hazards identification

### GHS Classification

| | |
|---|---|
| Respiratory sensitization, Category 1 | H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled. |
| Skin sensitization, Category 1 | H317: May cause an allergic skin reaction. |
| Carcinogenicity, Category 1A | H350: May cause cancer. |

### GHS Label element

Hazard pictograms :



Signal Word : Danger

Hazard Statements : H317 May cause an allergic skin reaction.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H350 May cause cancer.

Precautionary Statements : **Prevention:**
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.
P272 Contaminated work clothing should not be allowed out of the workplace.
P280 Wear protective gloves.
P281 Use personal protective equipment as required.

P285 In case of inadequate ventilation wear respiratory protection.
**Response:**
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P304 + P341 IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P363 Wash contaminated clothing before reuse.
**Storage:**
P405 Store locked up.
**Disposal:**
P501 Dispose of contents/ container to an approved waste disposal plant.

Warning : Reports have associated repeated and prolonged exposure to some of the chemicals in this product with permanent brain,liver, kidney and nervous system damage. Intentional misuse by deliberate concentration and inhalation of vapors may be harmful or fatal.

See Section 11 for more detailed information on health effects and symptoms.

## 3. Composition/information on ingredients

**Hazardous ingredients**

| Chemical Name | CAS-No. | Concentration (%) |
|---|---|---|
| titanium dioxide | 13463-67-7 | >= 2 - < 5 % |
| xylene | 1330-20-7 | >= 2 - < 5 % |
| ethylbenzene | 100-41-4 | >= 0 - < 1 % |
| Quartz (SiO2) | 14808-60-7 | >= 0 - < 1 % |
| aromatic polyisocyanate | 53317-61-6 | >= 0 - < 1 % |
| Carbon black | 1333-86-4 | >= 0 - < 1 % |
| 4,4'-methylenediphenyl diisocyanate | 101-68-8 | >= 0 - < 1 % |

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.

## 4. First aid measures

If inhaled : Move to fresh air.
Consult a physician after significant exposure.

In case of skin contact : Take off contaminated clothing and shoes immediately.
Wash off with soap and plenty of water.
If symptoms persist, call a physician.

| | | |
|---|---|---|
| In case of eye contact | : | Remove contact lenses.<br>Keep eye wide open while rinsing.<br>If eye irritation persists, consult a specialist. |
| If swallowed | : | Clean mouth with water and drink afterwards plenty of water.<br>Induce vomiting immediately and call a physician.<br>Do not give milk or alcoholic beverages.<br>Never give anything by mouth to an unconscious person. |
| Most important symptoms and effects, both acute and delayed | : | Asthmatic appearance<br>Allergic reactions<br>See Section 11 for more detailed information on health effects and symptoms.<br><br>sensitizing effects<br>carcinogenic effects |
| Protection of first-aiders | : | Move out of dangerous area.<br>Consult a physician.<br>Show this material safety data sheet to the doctor in attendance. |
| Notes to physician | : | Treat symptomatically. |

## 5. Fire-fighting measures

| | | |
|---|---|---|
| Suitable extinguishing media | : | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. |
| Specific extinguishing methods | : | Collect contaminated fire extinguishing water separately. This must not be discharged into drains.<br>Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. |
| Special protective equipment for fire-fighters | : | In the event of fire, wear self-contained breathing apparatus. |

## 6. Accidental release measures

| | | |
|---|---|---|
| Personal precautions, protective equipment and emergency procedures | : | Use personal protective equipment.<br>Deny access to unprotected persons. |
| Environmental precautions | : | Do not flush into surface water or sanitary sewer system.<br>If the product contaminates rivers and lakes or drains inform respective authorities.<br>Local authorities should be advised if significant spillages cannot be contained. |
| Methods and materials for containment and cleaning up | : | Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).<br>Keep in suitable, closed containers for disposal. |

## 7. Handling and storage

Advice on safe handling : Do not breathe vapors or spray mist.
Avoid exceeding the given occupational exposure limits (see section 8).
Do not get in eyes, on skin, or on clothing.
For personal protection see section 8.
Persons with a history of skin sensitization problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.
Smoking, eating and drinking should be prohibited in the application area.
Follow standard hygiene measures when handling chemical products.

Conditions for safe storage : Prevent unauthorized access.
Store in original container.
Keep container tightly closed in a dry and well-ventilated place.
Observe label precautions.
Store in accordance with local regulations.

Materials to avoid : no data available

## 8. Exposure controls/personal protection

| Component | CAS-No. | Basis ** | Value | Exposure limit(s)* / Form of exposure |
|---|---|---|---|---|
| xylene | 1330-20-7 | OSHA Z-1 | TWA | 100 ppm<br>435 mg/m3 |
| | | ACGIH | TWA | 100 ppm |
| | | ACGIH | STEL | 150 ppm |
| | | OSHA P0 | STEL | 150 ppm<br>655 mg/m3 |
| | | OSHA P0 | TWA | 100 ppm<br>435 mg/m3 |
| ethylbenzene | 100-41-4 | ACGIH | TWA | 100 ppm |
| | | ACGIH | STEL | 125 ppm |
| | | OSHA Z-1 | TWA | 100 ppm<br>435 mg/m3 |
| | | OSHA P0 | TWA | 100 ppm<br>435 mg/m3 |

| | | | | |
|---|---|---|---|---|
| | | | | |
| | | OSHA P0 | STEL | 125 ppm<br>545 mg/m3 |

*The above mentioned values are in accordance with the legislation in effect at the date of the release of this safety data sheet.

****Basis**
ACGIH. Threshold Limit Values (TLV)
OSHA P0. Table Z-1, Limit for Air Contaminat (1989 Vacated Values)
OSHA P1. Permissible Exposure Limits (PEL), Table Z-1, Limit for Air Contaminant
OSHA P2. Permissible Exposure Limits (PEL), Table Z-2
OSHA Z3. Table Z-3, Mineral Dust

**Engineering measures** : Use of adequate ventilation should be sufficient to control worker exposure to airborne contaminants. If the use of this product generates dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

**Personal protective equipment**

Respiratory protection : Use a properly fitted NIOSH approved air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.

The filter class for the respirator must be suitable for the maximum expected contaminant concentration (gas/vapor/aerosol/particulates) that may arise when handling the product. If this concentration is exceeded, self-contained breathing apparatus must be used.

Hand protection
Remarks : 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.

Eye protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary.

Skin and body protection : Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.

Hygiene measures : Avoid contact with skin, eyes and clothing.
Wash hands before breaks and immediately after handling the product.
Remove contaminated clothing and protective equipment before entering eating areas.
Wash thoroughly after handling.

## 9. Physical and chemical properties

| | | |
|---|---|---|
| Appearance | : | paste |
| Color | : | various |
| Odor | : | aromatic |
| Odor Threshold | : | no data available |
| Flash point | : | Note: not applicable |
| Ignition temperature | : | not applicable |
| Decomposition temperature | : | no data available |
| Lower explosion limit (Vol%) | : | no data available |
| Upper explosion limit (Vol%) | : | no data available |
| Flammability (solid, gas) | : | no data available |
| Oxidizing properties | : | no data available |
| Autoignition temperature | : | no data available |
| pH | : | no data available |
| Melting point/range / Freezing point | : | no data available |
| Boiling point/boiling range | : | no data available |
| Vapor pressure | : | no data available |
| Density | : | ca.1.4 g/cm3<br>at 68 °F (20 °C) |
| Water solubility | : | no data available |
| Partition coefficient: n-octanol/water | : | no data available |
| Viscosity, dynamic | : | no data available |
| Viscosity, kinematic | : | ca.> 20.5 mm2/s<br>at 104 °F (40 °C) |
| Relative vapor density | : | no data available |
| Evaporation rate | : | no data available |
| Burning rate | : | no data available |
| Volatile organic compounds (VOC) content | : | 40 g/l |

## 10. Stability and reactivity

| | | |
|---|---|---|
| Reactivity | : | No dangerous reaction known under conditions of normal use. |
| Chemical stability | : | The product is chemically stable. |
| Possibility of hazardous reactions | : | Stable under recommended storage conditions. |
| Conditions to avoid | : | no data available |
| Incompatible materials | : | no data available |

## 11. Toxicological information

### Acute toxicity

**Product**

| | | |
|---|---|---|
| Acute oral toxicity | : | no data available |
| Acute inhalation toxicity | : | no data available |
| Acute dermal toxicity | : | no data available |

**Ingredients:**

**aromatic polyisocyanate :**

| | | |
|---|---|---|
| Acute oral toxicity | : | LD50 Oral rat: > 5,000 mg/kg |

**Carbon black :**

| | | |
|---|---|---|
| Acute oral toxicity | : | LD50 Oral rat: > 8,000 mg/kg |

**4,4'-methylenediphenyl diisocyanate :**

| | | |
|---|---|---|
| Acute inhalation toxicity | : | Acute toxicity estimate : 1.5 mg/l<br>Test atmosphere: dust/mist<br>Method: Expert judgment |

### Skin corrosion/irritation

**Product**

no data available

### Serious eye damage/eye irritation

**Product**

no data available

### Respiratory or skin sensitization

**Product**

May cause an allergic skin reaction.

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

**Germ cell mutagenicity**

**Product**

Mutagenicity : no data available

**Carcinogenicity**

**Product**

Carcinogenicity : May cause cancer.

| | | |
|---|---|---|
| **IARC** | Group 2B: Possibly carcinogenic to humans | |
| | titanium dioxide | 13463-67-7 |
| | ethylbenzene | 100-41-4 |
| | Carbon black | 1333-86-4 |
| | Group 1: Carcinogenic to humans | |
| | Quartz (SiO2) | 14808-60-7 |
| **NTP** | Known to be human carcinogen | |
| | Quartz (SiO2) | 14808-60-7 |

**Reproductive Toxicity/Fertility**

**Product**

Reproductive toxicity : no data available

**Reproductive Toxicity/Development/Teratogenicity**

**Product**

Teratogenicity : no data available

**STOT-single exposure**

**Product**

Assessment: no data available

**STOT-repeated exposure**

Reports have associated repeated and prolonged exposure to some of the chemicals in this product with permanent brain,liver, kidney and nervous system damage. Intentional misuse by deliberate concentration and inhalation of vapors may be harmful or fatal.
Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

**Product**

Assessment: no data available

**Aspiration toxicity**

**Product**

no data available

## 12. Ecological information

Other information: Do not empty into drains; dispose of this material and its container in a safe way.
Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

**Component:**

| | | |
|---|---|---|
| Carbon black | 1333-86-4 | Toxicity to fish:<br>LC50<br>Species: Brachydanio rerio (zebrafish)<br>Dose: > 1,000 mg/l<br>Exposure time: 96 h |

## 13. Disposal considerations

**Disposal methods**

Waste from residues : 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.

Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.

## 14. Transport information

**DOT**
Not dangerous goods
**IATA**
Not dangerous goods
**IMDG**
Not dangerous goods

**Special precautions for user**
no data available

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**
not applicable

## 15. Regulatory information

**TSCA list** : All chemical substances in this product are either listed on the TSCA Inventory or are in compliance with a TSCA Inventory exemption.

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

**CERCLA Reportable Quantity**

This material does not contain any components with a CERCLA RQ.

**SARA304 Reportable Quantity**

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

**SARA 311/312 Hazards** : Chronic Health Hazard
Acute Health Hazard

**SARA 302** : 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:

| | | |
|---|---|---|
| xylene | 1330-20-7 | 2.60 % |

**Clean Air Act**

**Ozone-Depletion Potential** This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

The following chemical(s) are listed as HAP under the U.S. Clean Air Act, Section 12 (40 CFR 61):

| | | |
|---|---|---|
| xylene | 1330-20-7 | 2.60 % |

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

**California Prop 65** WARNING! This product contains a chemical known in the State of California to cause cancer.
WARNING: This product contains a chemical known in the State of California to cause birth defects or other reproductive harm.

## 16. Other information

**HMIS Classification**

| | | |
|---|---|---|
| **Health** | * | 3 |
| **Flammability** | | 0 |
| **Physical Hazard** | | 0 |
| **Personal Protection** | | X |

**Caution:** HMIS® rating is based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® rating is not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® rating is to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the

National Paint & Coatings Association (NPCA). Please note HMIS® attempts to convey full health warning information to all employees.

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Revision Date 07/29/2014

Material number: 476501

## 1. Identification

| | | |
|---|---|---|
| Product name | : | Sikaflex®-2c NS Part A limestone |
| Supplier | : | Sika Corporation |
| Address | : | 201 Polito Avenue<br>Lyndhurst, NJ 07071<br>USA<br>www.sikausa.com |
| Telephone | : | (201) 933-8800 |
| Telefax | : | (201) 804-1076 |
| Emergency telephone | : | CHEMTREC: 800-424-9300<br>INTERNATIONAL: 703-527-3887<br>ehs@sika-corp.com |
| Recommended use of the chemical and restrictions on use | : | For further information, refer to the product technical data sheet. |

## 2. Hazards identification

### GHS Classification

| | |
|---|---|
| Eye irritation, Category 2A | H319: Causes serious eye irritation. |
| Carcinogenicity, Category 1A | H350: May cause cancer. |

### GHS Label element

Hazard pictograms :



Signal Word : Danger

Hazard Statements : H319 Causes serious eye irritation.
H350 May cause cancer.

Precautionary Statements : **Prevention:**
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P264 Wash skin thoroughly after handling.
P280 Wear eye protection/ face protection.
P281 Use personal protective equipment as required.
**Response:**
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.

P337 + P313 If eye irritation persists: Get medical advice/ attention.
**Storage:**
P405 Store locked up.
**Disposal:**
P501 Dispose of contents/ container to an approved waste disposal plant.

Warning : Reports have associated repeated and prolonged exposure to some of the chemicals in this product with permanent brain,liver, kidney and nervous system damage. Intentional misuse by deliberate concentration and inhalation of vapors may be harmful or fatal.

See Section 11 for more detailed information on health effects and symptoms.

## 3. Composition/information on ingredients

**Hazardous ingredients**

| Chemical Name | CAS-No. | Concentration (%) |
|---|---|---|
| titanium dioxide | 13463-67-7 | >= 2 - < 5 % |
| xylene | 1330-20-7 | >= 2 - < 5 % |
| ethylbenzene | 100-41-4 | >= 0 - < 1 % |
| Quartz (SiO2) | 14808-60-7 | >= 0 - < 1 % |

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.

## 4. First aid measures

If inhaled : Move to fresh air.
Consult a physician after significant exposure.

In case of skin contact : Take off contaminated clothing and shoes immediately.
Wash off with soap and plenty of water.
If symptoms persist, call a physician.

In case of eye contact : Immediately flush eye(s) with plenty of water.
Remove contact lenses.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.

If swallowed : Clean mouth with water and drink afterwards plenty of water.
Induce vomiting immediately and call a physician.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and : Excessive lachrymation
See Section 11 for more detailed information on health effects

| | | |
|---|---|---|
| delayed | | and symptoms.<br><br>irritant effects<br>carcinogenic effects |
| Protection of first-aiders | : | Move out of dangerous area.<br>Consult a physician.<br>Show this material safety data sheet to the doctor in attendance. |
| Notes to physician | : | Treat symptomatically. |

## 5. Fire-fighting measures

| | | |
|---|---|---|
| Suitable extinguishing media | : | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. |
| Specific extinguishing methods | : | Collect contaminated fire extinguishing water separately. This must not be discharged into drains.<br>Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. |
| Special protective equipment for fire-fighters | : | In the event of fire, wear self-contained breathing apparatus. |

## 6. Accidental release measures

| | | |
|---|---|---|
| Personal precautions, protective equipment and emergency procedures | : | Use personal protective equipment.<br>Deny access to unprotected persons. |
| Environmental precautions | : | Do not flush into surface water or sanitary sewer system.<br>If the product contaminates rivers and lakes or drains inform respective authorities.<br>Local authorities should be advised if significant spillages cannot be contained. |
| Methods and materials for containment and cleaning up | : | Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).<br>Keep in suitable, closed containers for disposal. |

## 7. Handling and storage

| | | |
|---|---|---|
| Advice on safe handling | : | Avoid exceeding the given occupational exposure limits (see section 8).<br>Do not get in eyes, on skin, or on clothing.<br>For personal protection see section 8.<br>Smoking, eating and drinking should be prohibited in the application area.<br>Follow standard hygiene measures when handling chemical products. |
| Conditions for safe storage | : | Prevent unauthorized access. |

Store in original container.
Keep container tightly closed in a dry and well-ventilated place.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Observe label precautions.
Store in accordance with local regulations.

Materials to avoid : no data available

## 8. Exposure controls/personal protection

| Component | CAS-No. | Basis ** | Value | Exposure limit(s)* / Form of exposure |
|---|---|---|---|---|
| titanium dioxide | 13463-67-7 | ACGIH | TWA | 10 mg/m3 |
| | | OSHA P0 | TWA | 10 mg/m3<br>Total |
| | | OSHA Z-1 | TWA | 15 mg/m3<br>total dust |
| xylene | 1330-20-7 | OSHA Z-1 | TWA | 100 ppm<br>435 mg/m3 |
| | | ACGIH | TWA | 100 ppm |
| | | ACGIH | STEL | 150 ppm |
| | | OSHA P0 | STEL | 150 ppm<br>655 mg/m3 |
| | | OSHA P0 | TWA | 100 ppm<br>435 mg/m3 |
| ethylbenzene | 100-41-4 | ACGIH | TWA | 100 ppm |
| | | ACGIH | STEL | 125 ppm |
| | | OSHA Z-1 | TWA | 100 ppm<br>435 mg/m3 |
| | | OSHA P0 | TWA | 100 ppm<br>435 mg/m3 |
| | | OSHA P0 | STEL | 125 ppm<br>545 mg/m3 |
| Quartz (SiO2) | 14808-60-7 | ACGIH | TWA | 0.025 mg/m3<br>Respirable fraction |

| | | | | |
|---|---|---|---|---|
| | | OSHA Z-3 | TWA | 30 mg/m3 / %SiO2+2 total dust |
| | | OSHA Z-3 | TWA | 10 mg/m3 / %SiO2+2 respirable |
| | | OSHA Z-3 | TWA | 250 mppcf / %SiO2+5 respirable |
| | | OSHA P0 | TWA | 0.1 mg/m3 Respirable fraction |

*The above mentioned values are in accordance with the legislation in effect at the date of the release of this safety data sheet.

**__Basis__
ACGIH. Threshold Limit Values (TLV)
OSHA P0. Table Z-1, Limit for Air Contaminat (1989 Vacated Values)
OSHA P1. Permissible Exposure Limits (PEL), Table Z-1, Limit for Air Contaminant
OSHA P2. Permissible Exposure Limits (PEL), Table Z-2
OSHA Z3. Table Z-3, Mineral Dust

**Engineering measures** : Use of adequate ventilation should be sufficient to control worker exposure to airborne contaminants. If the use of this product generates dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

**Personal protective equipment**

Respiratory protection : Use a properly fitted NIOSH approved air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.

The filter class for the respirator must be suitable for the maximum expected contaminant concentration (gas/vapor/aerosol/particulates) that may arise when handling the product. If this concentration is exceeded, self-contained breathing apparatus must be used.

Hand protection
Remarks : 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.

Eye protection : Safety eyewear complying with an approved standard should

| | | |
|---|---|---|
| | | be used when a risk assessment indicates this is necessary. |
| Skin and body protection | : | Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. |
| Hygiene measures | : | Wash hands before breaks and immediately after handling the product.<br>Remove contaminated clothing and protective equipment before entering eating areas. |

## 9. Physical and chemical properties

| | | |
|---|---|---|
| Appearance | : | viscous |
| Color | : | gray |
| Odor | : | aromatic |
| Odor Threshold | : | no data available |
| Flash point | : | > 230 °F (> 110 °C) |
| Ignition temperature | : | not applicable |
| Decomposition temperature | : | no data available |
| Lower explosion limit (Vol%) | : | no data available |
| Upper explosion limit (Vol%) | : | no data available |
| Flammability (solid, gas) | : | no data available |
| Oxidizing properties | : | no data available |
| Autoignition temperature | : | no data available |
| pH | : | no data available |
| Melting point/range / Freezing point | : | no data available |
| Boiling point/boiling range | : | no data available |
| Vapor pressure | : | no data available |
| Density | : | 1.55 g/cm3<br>at 68 °F (20 °C) |
| Water solubility | : | Note: insoluble |
| Partition coefficient: n-octanol/water | : | no data available |
| Viscosity, dynamic | : | no data available |
| Viscosity, kinematic | : | > 20.5 mm2/s |

| | | |
|---|---|---|
| | | at 104 °F (40 °C) |
| Relative vapor density | : | no data available |
| Evaporation rate | : | no data available |
| Burning rate | : | no data available |
| Volatile organic compounds (VOC) content | : | 19 g/l<br>A+B Combined |

## 10. Stability and reactivity

| | | |
|---|---|---|
| Reactivity | : | No dangerous reaction known under conditions of normal use. |
| Chemical stability | : | The product is chemically stable. |
| Possibility of hazardous reactions | : | Stable under recommended storage conditions. |
| Conditions to avoid | : | no data available |
| Incompatible materials | : | no data available |

## 11. Toxicological information

### Acute toxicity

**Product**

| | | |
|---|---|---|
| Acute oral toxicity | : | no data available |
| Acute inhalation toxicity | : | no data available |
| Acute dermal toxicity | : | no data available |

### Skin corrosion/irritation

**Product**

no data available

### Serious eye damage/eye irritation

**Product**

Causes serious eye irritation.

### Respiratory or skin sensitization

**Product**

no data available

**Germ cell mutagenicity**

**Product**

Mutagenicity : no data available

**Carcinogenicity**

**Product**

Carcinogenicity : May cause cancer.

| | | |
|---|---|---|
| **IARC** | Group 1: Carcinogenic to humans | |
| | Quartz (SiO2) | 14808-60-7 |
| | Group 2B: Possibly carcinogenic to humans | |
| | titanium dioxide | 13463-67-7 |
| | ethylbenzene | 100-41-4 |
| **NTP** | Known to be human carcinogen | |
| | Quartz (SiO2) | 14808-60-7 |

**Reproductive Toxicity/Fertility**

**Product**

Reproductive toxicity : no data available

**Reproductive Toxicity/Development/Teratogenicity**

**Product**

Teratogenicity : no data available

**STOT-single exposure**

**Product**

Assessment: no data available

**STOT-repeated exposure**

Reports have associated repeated and prolonged exposure to some of the chemicals in this product with permanent brain,liver, kidney and nervous system damage. Intentional misuse by deliberate concentration and inhalation of vapors may be harmful or fatal.

**Product**

Assessment: no data available

**Aspiration toxicity**

**Product**

no data available

## 12. Ecological information

Other information Do not empty into drains; dispose of this material and its container in a safe way.

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

## 13. Disposal considerations

**Disposal methods**

| | | |
|---|---|---|
| Waste from residues | : | 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. |
| Contaminated packaging | : | Empty containers should be taken to an approved waste handling site for recycling or disposal. |

## 14. Transport information

**DOT**
Not dangerous goods
**IATA**
Not dangerous goods
**IMDG**
Not dangerous goods

**Special precautions for user**
no data available

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**
not applicable

## 15. Regulatory information

**TSCA list** : All chemical substances in this product are either listed on the TSCA Inventory or are in compliance with a TSCA Inventory exemption.

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

**CERCLA Reportable Quantity**
This material does not contain any components with a CERCLA RQ.

**SARA304 Reportable Quantity**
This material does not contain any components with a section 304 EHS RQ.

**SARA 311/312 Hazards** : Acute Health Hazard
Chronic Health Hazard

| | | |
|---|---|---|
| **SARA 302** | : | 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:<br>xylene 1330-20-7 2.57 % |

**Clean Air Act**

| | |
|---|---|
| **Ozone-Depletion Potential** | This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B). |

The following chemical(s) are listed as HAP under the U.S. Clean Air Act, Section 12 (40 CFR 61):

xylene 1330-20-7 2.57 %

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

| | |
|---|---|
| **California Prop 65** | WARNING! This product contains a chemical known in the State of California to cause cancer.<br>WARNING: This product contains a chemical known in the State of California to cause birth defects or other reproductive harm. |

## 16. Other information

**HMIS Classification**

| | | |
|---|---|---|
| **Health** | * | 3 |
| **Flammability** | | 1 |
| **Physical Hazard** | | 0 |
| **Personal Protection** | | X |

**Caution:** HMIS® rating is based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® rating is not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® rating is to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). Please note HMIS® attempts to convey full health warning information to all employees.

**Notes to Reader**

The information contained in this Safety Data Sheet applies only to the actual Sika Corporation ("Sika") product identified and described herein. This information is not intended to address, nor does it address the use or application of the identified Sika product in combination with any other material, product or process. All of the information set forth herein is based on technical data regarding the identified product that Sika believes to be reliable as of the date hereof. Prior to each use of any Sika product, the user must always read and follow the warnings and instructions on the product's current Product Data Sheet, product

label and Safety Data Sheet for each Sika product, which are available at web site and/or telephone number listed in Section 1 of this SDS.

SIKA MAKES NO WARRANTIES EXPRESS OR IMPLIED AND ASSUMES NO LIABILITY ARISING FROM THIS INFORMATION OR ITS USE. SIKA SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES AND SHALL NOT BE RESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHTS HELD BY OTHERS.

All sales of Sika products are subject to its current terms and conditions of sale available at www.sikausa.com or 201-933-8800.

Revision Date 07/21/2014

Material number: 183678

## 1. Identification

| | | |
|---|---|---|
| Product name | : | Sikaflex®-2c NS/SL Part B |
| Supplier | : | Sika Corporation |
| Address | : | 201 Polito Avenue<br>Lyndhurst, NJ 07071<br>USA<br>www.sikausa.com |
| Telephone | : | (201) 933-8800 |
| Telefax | : | (201) 804-1076 |
| Emergency telephone | : | CHEMTREC: 800-424-9300<br>INTERNATIONAL: 703-527-3887<br>ehs@sika-corp.com |
| Recommended use of the chemical and restrictions on use | : | For further information, refer to the product technical data sheet. |

## 2. Hazards identification

### GHS Classification

| | |
|---|---|
| Flammable liquids, Category 3 | H226: Flammable liquid and vapor. |
| Carcinogenicity, Category 2 | H351: Suspected of causing cancer. |

### GHS Label element

Hazard pictograms :



Signal Word : Warning

Hazard Statements : H226 Flammable liquid and vapor.
H351 Suspected of causing cancer.

Precautionary Statements : **Prevention:**
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P280 Wear protective gloves/ eye protection/ face protection.

P281 Use personal protective equipment as required.
**Response:**
P303 + P361 + P353 IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
**Storage:**
P403 + P235 Store in a well-ventilated place. Keep cool.
P405 Store locked up.
**Disposal:**
P501 Dispose of contents/ container to an approved waste disposal plant.

Warning : Reports have associated repeated and prolonged exposure to some of the chemicals in this product with permanent brain,liver, kidney and nervous system damage. Intentional misuse by deliberate concentration and inhalation of vapors may be harmful or fatal.

See Section 11 for more detailed information on health effects and symptoms.

## 3. Composition/information on ingredients

**Hazardous ingredients**

| Chemical Name | CAS-No. | Concentration (%) |
|---|---|---|
| xylene | 1330-20-7 | >= 5 - < 10 % |
| ethylbenzene | 100-41-4 | >= 1 - < 2 % |

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.

## 4. First aid measures

If inhaled : Move to fresh air.
Consult a physician after significant exposure.

In case of skin contact : Take off contaminated clothing and shoes immediately.
Wash off with soap and plenty of water.
If symptoms persist, call a physician.

In case of eye contact : Remove contact lenses.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.

If swallowed : Clean mouth with water and drink afterwards plenty of water.
Do not give milk or alcoholic beverages.

Never give anything by mouth to an unconscious person.

| | | |
|---|---|---|
| Most important symptoms and effects, both acute and delayed | : | No known significant effects or hazards.<br><br>See Section 11 for more detailed information on health effects and symptoms. |
| Protection of first-aiders | : | Move out of dangerous area.<br>Consult a physician.<br>Show this material safety data sheet to the doctor in attendance. |
| Notes to physician | : | Treat symptomatically. |

## 5. Fire-fighting measures

| | | |
|---|---|---|
| Suitable extinguishing media | : | Alcohol-resistant foam<br>Carbon dioxide (CO2)<br>Dry chemical |
| Unsuitable extinguishing media | : | Water |
| Specific extinguishing methods | : | Use water spray to cool unopened containers.<br>Collect contaminated fire extinguishing water separately. This must not be discharged into drains.<br>Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. |
| Special protective equipment for fire-fighters | : | In the event of fire, wear self-contained breathing apparatus. |

## 6. Accidental release measures

| | | |
|---|---|---|
| Personal precautions, protective equipment and emergency procedures | : | Use personal protective equipment.<br>Remove all sources of ignition.<br>Deny access to unprotected persons.<br>Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas. |
| Environmental precautions | : | Prevent product from entering drains.<br>If the product contaminates rivers and lakes or drains inform respective authorities.<br>Local authorities should be advised if significant spillages cannot be contained. |
| Methods and materials for containment and cleaning up | : | Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). |

## 7. Handling and storage

Advice on safe handling : Do not breathe vapors or spray mist.
Avoid exceeding the given occupational exposure limits (see section 8).
Do not get in eyes, on skin, or on clothing.
For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.
Take precautionary measures against static discharge.
Open drum carefully as content may be under pressure.
Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors).
Follow standard hygiene measures when handling chemical products.

Conditions for safe storage : Store in original container.
Keep in a well-ventilated place.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Observe label precautions.
Store in accordance with local regulations.

Materials to avoid : no data available

## 8. Exposure controls/personal protection

| Component | CAS-No. | Basis ** | Value | Exposure limit(s)* / Form of exposure |
|---|---|---|---|---|
| xylene | 1330-20-7 | OSHA Z-1 | TWA | 100 ppm<br>435 mg/m3 |
| | | ACGIH | TWA | 100 ppm |
| | | ACGIH | STEL | 150 ppm |
| | | OSHA P0 | STEL | 150 ppm<br>655 mg/m3 |
| | | OSHA P0 | TWA | 100 ppm<br>435 mg/m3 |
| ethylbenzene | 100-41-4 | ACGIH | TWA | 100 ppm |
| | | ACGIH | STEL | 125 ppm |
| | | OSHA Z-1 | TWA | 100 ppm<br>435 mg/m3 |
| | | OSHA P0 | TWA | 100 ppm<br>435 mg/m3 |

| | | | | |
|---|---|---|---|---|
| | | | | |
| | | OSHA P0 | STEL | 125 ppm<br>545 mg/m3 |

*The above mentioned values are in accordance with the legislation in effect at the date of the release of this safety data sheet.

****Basis**
ACGIH. Threshold Limit Values (TLV)
OSHA P0. Table Z-1, Limit for Air Contaminat (1989 Vacated Values)
OSHA P1. Permissible Exposure Limits (PEL), Table Z-1, Limit for Air Contaminant
OSHA P2. Permissible Exposure Limits (PEL), Table Z-2
OSHA Z3. Table Z-3, Mineral Dust

**Engineering measures** : Use of adequate ventilation should be sufficient to control worker exposure to airborne contaminants. If the use of this product generates dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.
The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits.

**Personal protective equipment**

Respiratory protection : Use a properly fitted NIOSH approved air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.

The filter class for the respirator must be suitable for the maximum expected contaminant concentration (gas/vapor/aerosol/particulates) that may arise when handling the product. If this concentration is exceeded, self-contained breathing apparatus must be used.

Hand protection
Remarks : 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.

Eye protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary.

Skin and body protection : Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.

Hygiene measures : Avoid contact with skin, eyes and clothing.
Wash hands before breaks and immediately after handling the product.
Remove respiratory and skin/eye protection only after vapors have been cleared from the area.
Remove contaminated clothing and protective equipment before entering eating areas.

## 9. Physical and chemical properties

| | | |
|---|---|---|
| Appearance | : | liquid |
| Color | : | clear<br>transparent |
| Odor | : | aromatic |
| Odor Threshold | : | no data available |
| Flash point | : | 111.9 °F (44.4 °C) |
| Ignition temperature | : | 869 °F (465 °C) |
| Decomposition temperature | : | no data available |
| Lower explosion limit (Vol%) | : | 1 %(V) |
| Upper explosion limit (Vol%) | : | 7 %(V) |
| Flammability (solid, gas) | : | no data available |
| Oxidizing properties | : | no data available |
| Autoignition temperature | : | no data available |
| pH | : | no data available |
| Melting point/range / Freezing point | : | no data available |
| Boiling point/boiling range | : | no data available |
| Vapor pressure | : | 6.000 mmHg (7.9993 hpa) |
| Density | : | 1.02 g/cm3<br>at 68 °F (20 °C) |
| Water solubility | : | no data available |
| Partition coefficient: n-octanol/water | : | no data available |
| Viscosity, dynamic | : | no data available |
| Viscosity, kinematic | : | no data available |
| Relative vapor density | : | no data available |
| Evaporation rate | : | no data available |
| Burning rate | : | no data available |
| Volatile organic compounds (VOC) content | : | 19 g/l Sikaflex®-2c NS (A) + (B) Combined |

: < 50 g/l Sikaflex®-2c NS EZ Mix (A) + (B) Combined

: 38 g/l Sikaflex®-2c SL (A) + (B) Combined

## 10. Stability and reactivity

| | | |
|---|---|---|
| Reactivity | : | No dangerous reaction known under conditions of normal use. |
| Chemical stability | : | The product is chemically stable. |
| Possibility of hazardous reactions | : | Stable under recommended storage conditions.<br>Vapors may form explosive mixture with air. |
| Conditions to avoid | : | Heat, flames and sparks. |
| Incompatible materials | : | no data available |

## 11. Toxicological information

### Acute toxicity

**Product**

| | | |
|---|---|---|
| Acute oral toxicity | : | no data available |
| Acute inhalation toxicity | : | no data available |
| Acute dermal toxicity | : | no data available |

### Skin corrosion/irritation

**Product**

no data available

### Serious eye damage/eye irritation

**Product**

no data available

### Respiratory or skin sensitization

**Product**

no data available

### Germ cell mutagenicity

**Product**

Mutagenicity : no data available

**Carcinogenicity**

**Product**

Carcinogenicity : Suspected of causing cancer.

| | | |
|---|---|---|
| **IARC** | Group 2B: Possibly carcinogenic to humans | |
| | ethylbenzene | 100-41-4 |
| **NTP** | not applicable | |

**Reproductive Toxicity/Fertility**

**Product**

Reproductive toxicity : no data available

**Reproductive Toxicity/Development/Teratogenicity**

**Product**

Teratogenicity : no data available

**STOT-single exposure**

**Product**

Assessment: no data available

**STOT-repeated exposure**

Reports have associated repeated and prolonged exposure to some of the chemicals in this product with permanent brain,liver, kidney and nervous system damage. Intentional misuse by deliberate concentration and inhalation of vapors may be harmful or fatal.

**Product**

Assessment: no data available

**Aspiration toxicity**

**Product**

no data available

## 12. Ecological information

Other information — Do not empty into drains; dispose of this material and its container in a safe way.
Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

## 13. Disposal considerations

### Disposal methods

| | | |
|---|---|---|
| Waste from residues | : | 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. |
| Contaminated packaging | : | Empty containers should be taken to an approved waste handling site for recycling or disposal. |

## 14. Transport information

**DOT**

| | |
|---|---|
| UN number | 1993 |
| Description of the goods | Flammable liquids, n.o.s. (xylene) |
| Class | 3 |
| Packing group | III |
| Labels | 3 |
| Emergency Response Guidebook Number | 128 |

**IATA**

| | |
|---|---|
| UN number | 1993 |
| Description of the goods | Flammable liquid, n.o.s. (xylene) |
| Class | 3 |
| Packing group | III |
| Labels | 3 |
| Packing instruction (cargo aircraft) | 366 |
| Packing instruction (passenger aircraft) | 309 |
| Packing instruction (passenger aircraft) | Y309 |

**IMDG**

| | |
|---|---|
| UN number | 1993 |
| Description of the goods | FLAMMABLE LIQUID, N.O.S. (xylene) |
| Class | 3 |
| Packing group | III |
| Labels | 3 |
| EmS Number 1 | F-E |
| EmS Number 2 | S-E |

Marine pollutant no

DOT: As per 49CFR 173.150 (f) Combustible Liquid Exception, Material is Not Regulated.
IMDG: For Limited Quantity special provisions reference IMDG Code Chapter 3.4

**Special precautions for user**
no data available

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**
not applicable

## 15. Regulatory information

**TSCA list** : All chemical substances in this product are either listed on the TSCA Inventory or are in compliance with a TSCA Inventory exemption.

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

**CERCLA Reportable Quantity**
This material does not contain any components with a CERCLA RQ.

**SARA304 Reportable Quantity**
This material does not contain any components with a section 304 EHS RQ.

**SARA 311/312 Hazards** : Fire Hazard
Chronic Health Hazard

**SARA 302** : 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:

| | | |
|---|---|---|
| xylene | 1330-20-7 | 7.20 % |
| ethylbenzene | 100-41-4 | 1.69 % |

**Clean Air Act**

**Ozone-Depletion Potential** This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

The following chemical(s) are listed as HAP under the U.S. Clean Air Act, Section 12 (40 CFR 61):

| | | |
|---|---|---|
| xylene | 1330-20-7 | 7.20 % |
| ethylbenzene | 100-41-4 | 1.69 % |

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

**California Prop 65** WARNING! This product contains a chemical known in the State of California to cause cancer.
WARNING: This product contains a chemical known in the State of California to cause birth defects or other reproductive harm.

## 16. Other information

**HMIS Classification**

| | | |
|---|---|---|
| **Health** | * | 2 |
| **Flammability** | | 2 |
| **Physical Hazard** | | 0 |
| **Personal Protection** | | X |

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**Notes to Reader**

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All sales of Sika products are subject to its current terms and conditions of sale available at www.sikausa.com or 201-933-8800.

Revision Date 07/21/2014

Material number: 183677

## 1. Identification

| | | |
|---|---|---|
| Product name | : | SikaGrout®-212 |
| Supplier | : | Sika Corporation |
| Address | : | 201 Polito Avenue<br>Lyndhurst, NJ 07071<br>USA<br>www.sikausa.com |
| Telephone | : | (201) 933-8800 |
| Telefax | : | (201) 804-1076 |
| Emergency telephone | : | CHEMTREC: 800-424-9300<br>INTERNATIONAL: 703-527-3887<br>ehs@sika-corp.com |
| Recommended use of the chemical and restrictions on use | : | For further information, refer to the product technical data sheet. |

## 2. Hazards identification

### GHS Classification

| | |
|---|---|
| Skin irritation , Category 2 | H315: Causes skin irritation. |
| Serious eye damage , Category 1 | H318: Causes serious eye damage. |
| Carcinogenicity , Category 1A | H350: May cause cancer. |
| Specific target organ systemic toxicity - single exposure , Category 3, Respiratory system | H335: May cause respiratory irritation. |

### GHS Label element

Hazard pictograms :



Signal Word : Danger

Hazard Statements : H315 Causes skin irritation.
H318 Causes serious eye damage.
H335 May cause respiratory irritation.
H350 May cause cancer.

Precautionary Statements : **Prevention:**
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.
P264 Wash skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear eye protection/ face protection.

P280 Wear protective gloves.
P281 Use personal protective equipment as required.
**Response:**
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
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.
P310 Immediately call a POISON CENTER or doctor/ physician.
P332 + P313 If skin irritation occurs: Get medical advice/ attention.
P362 Take off contaminated clothing and wash before reuse.
**Storage:**
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.
**Disposal:**
P501 Dispose of contents/ container to an approved waste disposal plant.

Warning : Contains material that may cause target organ damage.

See Section 11 for more detailed information on health effects and symptoms.

## 3. Composition/information on ingredients

**Hazardous ingredients**

| Chemical Name | CAS-No. | Concentration (%) |
|---|---|---|
| Quartz (SiO2) | 14808-60-7 | >= 50 - <= 100 % |
| Portland cement | 65997-15-1 | >= 25 - < 50 % |
| Quartz (SiO2) <5µm | 14808-60-7 | >= 0 - < 1 % |

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.

## 4. First aid measures

If inhaled : Move to fresh air.
Consult a physician after significant exposure.

In case of skin contact : Take off contaminated clothing and shoes immediately.
Wash off with soap and plenty of water.
If symptoms persist, call a physician.

In case of eye contact : Small amounts splashed into eyes can cause irreversible tissue damage and blindness.

| | | |
|---|---|---|
| | | In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.<br>Continue rinsing eyes during transport to hospital.<br>Remove contact lenses.<br>Keep eye wide open while rinsing. |
| If swallowed | : | Clean mouth with water and drink afterwards plenty of water.<br>Induce vomiting immediately and call a physician.<br>Do NOT induce vomiting.<br>Do not give milk or alcoholic beverages.<br>Never give anything by mouth to an unconscious person. |
| Most important symptoms and effects, both acute and delayed | : | Cough<br>Respiratory disorder<br>Excessive lachrymation<br>Erythema<br>Dermatitis<br>See Section 11 for more detailed information on health effects and symptoms.<br><br>irritant effects<br>carcinogenic effects |
| Protection of first-aiders | : | Move out of dangerous area.<br>Consult a physician.<br>Show this material safety data sheet to the doctor in attendance. |
| Notes to physician | : | Treat symptomatically. |

## 5. Fire-fighting measures

| | | |
|---|---|---|
| Suitable extinguishing media | : | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. |
| Specific extinguishing methods | : | Collect contaminated fire extinguishing water separately. This must not be discharged into drains.<br>Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. |
| Special protective equipment for fire-fighters | : | In the event of fire, wear self-contained breathing apparatus. |

## 6. Accidental release measures

| | | |
|---|---|---|
| Personal precautions, protective equipment and emergency procedures | : | Use personal protective equipment.<br>Avoid breathing dust.<br>Deny access to unprotected persons. |
| Environmental precautions | : | Do not flush into surface water or sanitary sewer system.<br>If the product contaminates rivers and lakes or drains inform respective authorities.<br>Local authorities should be advised if significant spillages cannot be contained. |

| | | |
|---|---|---|
| Methods and materials for containment and cleaning up | : | Pick up and arrange disposal without creating dust.<br>Keep in suitable, closed containers for disposal. |

## 7. Handling and storage

| | | |
|---|---|---|
| Advice on safe handling | : | Do not breathe vapors/dust.<br>Avoid exceeding the given occupational exposure limits (see section 8).<br>Do not get in eyes, on skin, or on clothing.<br>For personal protection see section 8.<br>Smoking, eating and drinking should be prohibited in the application area.<br>Follow standard hygiene measures when handling chemical products. |
| Conditions for safe storage | : | Prevent unauthorized access.<br>Store in original container.<br>Keep in a well-ventilated place.<br>Observe label precautions.<br>Store in accordance with local regulations. |
| Materials to avoid | : | no data available |

## 8. Exposure controls/personal protection

| Component | CAS-No. | Basis ** | Value | Exposure limit(s)* / Form of exposure |
|---|---|---|---|---|
| Quartz (SiO2) | 14808-60-7 | ACGIH | TWA | 0.025 mg/m3<br>Respirable fraction |
| | | OSHA Z-3 | TWA | 30 mg/m3/%SiO2+2<br>total dust |
| | | OSHA Z-3 | TWA | 10 mg/m3/%SiO2+2<br>respirable |
| | | OSHA Z-3 | TWA | 250 mppcf/%SiO2+5<br>respirable |
| | | OSHA P0 | TWA | 0.1 mg/m3<br>Respirable fraction |
| Portland cement | 65997-15-1 | ACGIH | TWA | 1 mg/m3<br>Respirable fraction |
| | | OSHA P0 | TWA | 10 mg/m3<br>Total |
| | | OSHA P0 | TWA | 5 mg/m3<br>Respirable fraction |

| | | | | |
|---|---|---|---|---|
| | | OSHA Z-1 | TWA | 15 mg/m3<br>total dust |
| | | OSHA Z-1 | TWA | 5 mg/m3<br>respirable fraction |
| | | OSHA Z-3 | TWA | 50 Million particles<br>per cubic foot<br>Dust |
| Quartz (SiO2) <5µm | 14808-60-7 | ACGIH | TWA | 0.025 mg/m3<br>Respirable fraction |
| | | OSHA Z-3 | TWA | 30 mg/m3/%SiO2+2<br>total dust |
| | | OSHA Z-3 | TWA | 10 mg/m3/%SiO2+2<br>respirable |
| | | OSHA Z-3 | TWA | 250 mppcf/%SiO2+5<br>respirable |
| | | OSHA P0 | TWA | 0.1 mg/m3<br>Respirable fraction |

*The above mentioned values are in accordance with the legislation in effect at the date of the release of this safety data sheet.

**__Basis__
ACGIH. Threshold Limit Values (TLV)
OSHA P0. Table Z-1, Limit for Air Contaminat (1989 Vacated Values)
OSHA P1. Permissible Exposure Limits (PEL), Table Z-1, Limit for Air Contaminant
OSHA P2. Permissible Exposure Limits (PEL), Table Z-2
OSHA Z3. Table Z-3, Mineral Dust

**Engineering measures** : Use of adequate ventilation should be sufficient to control worker exposure to airborne contaminants. If the use of this product generates dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

**Personal protective equipment**

Respiratory protection : Use a properly fitted NIOSH approved air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.

The filter class for the respirator must be suitable for the maximum expected contaminant concentration (gas/vapor/aerosol/particulates) that may arise when handling

| | | |
|---|---|---|
| | | the product. If this concentration is exceeded, self-contained breathing apparatus must be used. |
| Hand protection<br>Remarks | : | 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. |
| Eye protection | : | Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary. |
| Skin and body protection | : | Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. |
| Hygiene measures | : | Avoid contact with skin, eyes and clothing.<br>Wash hands before breaks and immediately after handling the product.<br>Remove contaminated clothing and protective equipment before entering eating areas.<br>Wash thoroughly after handling.<br>Avoid breathing dust. |

## 9. Physical and chemical properties

| | | |
|---|---|---|
| Appearance | : | powder |
| Color | : | gray |
| Odor | : | odorless |
| Odor Threshold | : | no data available |
| Flash point | : | Note: not applicable |
| Ignition temperature | : | no data available |
| Decomposition temperature | : | no data available |
| Lower explosion limit (Vol%) | : | no data available |
| Upper explosion limit (Vol%) | : | no data available |
| Flammability (solid, gas) | : | no data available |
| Oxidizing properties | : | no data available |
| Autoignition temperature | : | no data available |
| pH | : | Note: not applicable |
| Melting point/range / Freezing point | : | no data available |
| Boiling point/boiling range | : | no data available |
| Vapor pressure | : | no data available |

| | | |
|---|---|---|
| Density | : | ca.2.85 g/cm3<br>at 73 °F (23 °C) |
| Water solubility | : | Note: insoluble |
| Partition coefficient: n-octanol/water | : | no data available |
| Viscosity, dynamic | : | no data available |
| Viscosity, kinematic | : | no data available |
| Relative vapor density | : | no data available |
| Evaporation rate | : | no data available |
| Burning rate | : | no data available |
| Volatile organic compounds (VOC) content | : | 0 g/l |

## 10. Stability and reactivity

| | | |
|---|---|---|
| Reactivity | : | No dangerous reaction known under conditions of normal use. |
| Chemical stability | : | The product is chemically stable. |
| Possibility of hazardous reactions | : | Stable under recommended storage conditions. |
| Conditions to avoid | : | no data available |
| Incompatible materials | : | no data available |

## 11. Toxicological information

### Acute toxicity

**Product**

| | | |
|---|---|---|
| Acute oral toxicity | : | no data available |
| Acute inhalation toxicity | : | no data available |
| Acute dermal toxicity | : | no data available |

### Skin corrosion/irritation

**Product**

Causes skin irritation.

### Serious eye damage/eye irritation

**Product**

Causes serious eye damage.

**Respiratory or skin sensitization**

**Product**

no data available

**Germ cell mutagenicity**

**Product**

Mutagenicity : no data available

**Carcinogenicity**

**Product**

Carcinogenicity : May cause cancer.

| | | |
|---|---|---|
| **IARC** | Group 1: Carcinogenic to humans | |
| | Quartz (SiO2) | 14808-60-7 |
| **NTP** | not applicable | |

**Reproductive Toxicity/Fertility**

**Product**

Reproductive toxicity : no data available

**Reproductive Toxicity/Development/Teratogenicity**

**Product**

Teratogenicity : no data available

**STOT-single exposure**

**Product**

Assessment: May cause respiratory irritation.

**STOT-repeated exposure**

Prolonged exposure can cause silicosis.

**Product**

Assessment: no data available

**Aspiration toxicity**

**Product**

no data available

## 12. Ecological information

| | |
|---|---|
| Other information | Do not empty into drains; dispose of this material and its container in a safe way. |

## 13. Disposal considerations

**Disposal methods**

| | | |
|---|---|---|
| Waste from residues | : | 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. |
| Contaminated packaging | : | Empty containers should be taken to an approved waste handling site for recycling or disposal. |

## 14. Transport information

**DOT**
Not dangerous goods
**IATA**
Not dangerous goods
**IMDG**
Not dangerous goods

**Special precautions for user**
no data available

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**
not applicable

## 15. Regulatory information

**TSCA list** : All chemical substances in this product are either listed on the TSCA Inventory or are in compliance with a TSCA Inventory exemption.

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

**CERCLA Reportable Quantity**
This material does not contain any components with a CERCLA RQ.

**SARA304 Reportable Quantity**
This material does not contain any components with a section 304 EHS RQ.

**SARA 311/312 Hazards** : Acute Health Hazard
Chronic Health Hazard

**SARA 302** : SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**SARA 313** : SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**Clean Air Act**

**Ozone-Depletion Potential** This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 12 (40 CFR 61).
This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

**Clean Water Act**

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307
This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.
This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

**California Prop 65** WARNING! This product contains a chemical known in the State of California to cause cancer.
WARNING: This product contains a chemical known in the State of California to cause birth defects or other reproductive harm.

## 16. Other information

**HMIS Classification**

| | | |
|---|---|---|
| **Health** | * | 3 |
| **Flammability** | | 0 |
| **Physical Hazard** | | 0 |
| **Personal Protection** | | X |

**Caution:** HMIS® rating is based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® rating is not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® rating is to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). Please note HMIS® attempts to convey full health warning information to all employees.

**Notes to Reader**

The information contained in this Safety Data Sheet applies only to the actual Sika Corporation ("Sika") product identified and described herein. This information is not intended to address, nor does it address the use or application of the identified Sika product in combination with any other material, product or process. All of the information set forth herein is based on technical data regarding the identified product that Sika believes to be reliable as of the date hereof. Prior to each use of any Sika product, the user must always read and follow the warnings and instructions on the product's current Product Data Sheet, product

label and Safety Data Sheet for each Sika product, which are available at web site and/or telephone number listed in Section 1 of this SDS.

SIKA MAKES NO WARRANTIES EXPRESS OR IMPLIED AND ASSUMES NO LIABILITY ARISING FROM THIS INFORMATION OR ITS USE. SIKA SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES AND SHALL NOT BE RESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHTS HELD BY OTHERS.

All sales of Sika products are subject to its current terms and conditions of sale available at www.sikausa.com or 201-933-8800.

Revision Date 11/25/2013

Material number: 460323

## 1. Identification

| | | |
|---|---|---|
| Product name | : | SikaTop® PLUS Part A |
| Supplier | : | Sika Corporation |
| Address | : | 201 Polito Avenue<br>Lyndhurst, NJ 07071<br>USA<br>www.sikausa.com |
| Telephone | : | (201) 933-8800 |
| Telefax | : | (201) 804-1076 |
| Emergency telephone | : | CHEMTREC: 800-424-9300<br>INTERNATIONAL: 703-527-3887<br>ehs@sika-corp.com |
| Recommended use of the chemical and restrictions on use | : | For further information, refer to the product technical data sheet. |

## 2. Hazards identification

### GHS Classification

Not a hazardous substance or mixture.

### GHS Label element

Not a hazardous substance or mixture.

See Section 11 for more detailed information on health effects and symptoms.

## 3. Composition/information on ingredients

### Hazardous ingredients

There are no 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.

## 4. First aid measures

| | | |
|---|---|---|
| If inhaled | : | Move to fresh air. |
| In case of skin contact | : | Take off contaminated clothing and shoes immediately.<br>Wash off with soap and plenty of water. |
| In case of eye contact | : | Flush eyes with water as a precaution. |

| | | |
|---|---|---|
| | | Remove contact lenses.<br>Keep eye wide open while rinsing. |
| If swallowed | : | Clean mouth with water and drink afterwards plenty of water.<br>Do not give milk or alcoholic beverages.<br>Never give anything by mouth to an unconscious person. |
| Most important symptoms and effects, both acute and delayed | : | No known significant effects or hazards.<br><br>See Section 11 for more detailed information on health effects and symptoms. |
| Protection of first-aiders | : | No hazards which require special first aid measures. |
| Notes to physician | : | Treat symptomatically. |

## 5. Fire-fighting measures

| | | |
|---|---|---|
| Suitable extinguishing media | : | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. |
| Specific extinguishing methods | : | Collect contaminated fire extinguishing water separately. This must not be discharged into drains.<br>Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. |
| Special protective equipment for fire-fighters | : | In the event of fire, wear self-contained breathing apparatus. |

## 6. Accidental release measures

| | | |
|---|---|---|
| Environmental precautions | : | Local authorities should be advised if significant spillages cannot be contained. |
| Methods and materials for containment and cleaning up | : | Wipe up with absorbent material (e.g. cloth, fleece).<br>Keep in suitable, closed containers for disposal. |

## 7. Handling and storage

| | | |
|---|---|---|
| Advice on safe handling | : | For personal protection see section 8.<br>No special handling advice required.<br>Follow standard hygiene measures when handling chemical products. |
| Conditions for safe storage | : | Keep container tightly closed in a dry and well-ventilated place.<br>Store in accordance with local regulations. |
| Materials to avoid | : | no data available |

## 8. Exposure controls/personal protection

Contains no substances with occupational exposure limit values.

**Engineering measures** : Use of adequate ventilation should be sufficient to control worker exposure to airborne contaminants. If the use of this product generates dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

**Personal protective equipment**

Respiratory protection : Use a properly fitted NIOSH approved air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.

The filter class for the respirator must be suitable for the maximum expected contaminant concentration (gas/vapor/aerosol/particulates) that may arise when handling the product. If this concentration is exceeded, self-contained breathing apparatus must be used.

Hand protection
Remarks : 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.

Eye protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary.

Skin and body protection : Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.

Hygiene measures : Wash hands before breaks and immediately after handling the product.
Remove contaminated clothing and protective equipment before entering eating areas.

## 9. Physical and chemical properties

| | | |
|---|---|---|
| Appearance | : | liquid |
| Color | : | green |
| Odor | : | like acrylic |
| Odor Threshold | : | no data available |
| Flash point | : | > 220.1 °F (> 104.5 °C) |
| Ignition temperature | : | not applicable |
| Decomposition temperature | : | no data available |

| | | |
|---|---|---|
| Lower explosion limit (Vol%) | : | no data available |
| Upper explosion limit (Vol%) | : | no data available |
| Flammability (solid, gas) | : | no data available |
| Oxidizing properties | : | no data available |
| Autoignition temperature | : | no data available |
| pH | : | ca. 8.5<br>at<br>73 °F (23 °C) |
| Melting point/range / Freezing point | : | no data available |
| Boiling point/boiling range | : | no data available |
| Vapor pressure | : | no data available |
| Density | : | ca.1.1 g/cm3<br>at 73 °F (23 °C) |
| Water solubility | : | Note: soluble |
| Partition coefficient: n-octanol/water | : | no data available |
| Viscosity, dynamic | : | no data available |
| Viscosity, kinematic | : | > 20.5 mm2/s<br>at 104 °F (40 °C) |
| Relative vapor density | : | no data available |
| Evaporation rate | : | no data available |
| Burning rate | : | no data available |
| Volatile organic compounds (VOC) content | : | < 20 g/l<br>A+B Combined |

## 10. Stability and reactivity

| | | |
|---|---|---|
| Reactivity | : | No dangerous reaction known under conditions of normal use. |
| Chemical stability | : | The product is chemically stable. |
| Possibility of hazardous reactions | : | Stable under recommended storage conditions. |
| Conditions to avoid | : | no data available |
| Incompatible materials | : | no data available |

## 11. Toxicological information

**Acute toxicity**

**Product**

| | | |
|---|---|---|
| Acute oral toxicity | : | no data available |
| Acute inhalation toxicity | : | no data available |
| Acute dermal toxicity | : | no data available |

**Skin corrosion/irritation**

**Product**

no data available

**Serious eye damage/eye irritation**

**Product**

no data available

**Respiratory or skin sensitization**

**Product**

no data available

**Germ cell mutagenicity**

**Product**

| | | |
|---|---|---|
| Mutagenicity | : | no data available |

**Carcinogenicity**

**Product**

| | | |
|---|---|---|
| Carcinogenicity | : | no data available |

| | |
|---|---|
| **IARC** | not applicable |
| **NTP** | not applicable |

**Reproductive Toxicity/Fertility**

**Product**

| | | |
|---|---|---|
| Reproductive toxicity | : | no data available |

**Reproductive Toxicity/Development/Teratogenicity**

**Product**

| | | |
|---|---|---|
| Teratogenicity | : | no data available |

**STOT-single exposure**

**Product**

Assessment: no data available

**STOT-repeated exposure**

**Product**

Assessment: no data available

**Aspiration toxicity**

**Product**

no data available

## 12. Ecological information

| | |
|---|---|
| Other information | Do not empty into drains; dispose of this material and its container in a safe way.<br>Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. |

## 13. Disposal considerations

**Disposal methods**

| | | |
|---|---|---|
| Waste from residues | : | 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. |
| Contaminated packaging | : | Empty containers should be taken to an approved waste handling site for recycling or disposal. |

## 14. Transport information

**DOT**
Not dangerous goods
**IATA**
Not dangerous goods
**IMDG**
Not dangerous goods

**Special precautions for user**
no data available

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**
not applicable

## 15. Regulatory information

**TSCA list** : All chemical substances in this product are either listed on the TSCA Inventory or are in compliance with a TSCA Inventory exemption.

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

**CERCLA Reportable Quantity**

This material does not contain any components with a CERCLA RQ.

**SARA304 Reportable Quantity**

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

**SARA 311/312 Hazards** : No SARA Hazards

**SARA 302** : SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**SARA 313** : SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**Clean Air Act**

**Ozone-Depletion Potential** This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 12 (40 CFR 61).
This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

**Clean Water Act**

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.
This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.
This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

**California Prop 65** WARNING! This product contains a chemical known in the State of California to cause cancer.

## 16. Other information

**HMIS Classification**

| | | |
|---|---|---|
| Health | | 1 |
| Flammability | | 1 |
| Physical Hazard | | 0 |
| Personal Protection | | X |

**Caution:** HMIS® rating is based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® rating is not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® rating is to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). Please note HMIS® attempts to convey full health warning information to all employees.

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**Notes to Reader**

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SIKA MAKES NO WARRANTIES EXPRESS OR IMPLIED AND ASSUMES NO LIABILITY ARISING FROM THIS INFORMATION OR ITS USE. SIKA SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES AND SHALL NOT BE RESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHTS HELD BY OTHERS.

All sales of Sika products are subject to its current terms and conditions of sale available at www.sikausa.com or 201-933-8800.

Revision Date 11/13/2013

Material number: 187492

## 1. Identification

| | | |
|---|---|---|
| Product name | : | SikaTop®-111 PLUS Part B |
| Supplier | : | Sika Corporation |
| Address | : | 201 Polito Avenue<br>Lyndhurst, NJ 07071<br>USA<br>www.sikausa.com |
| Telephone | : | (201) 933-8800 |
| Telefax | : | (201) 804-1076 |
| Emergency telephone | : | CHEMTREC: 800-424-9300<br>INTERNATIONAL: 703-527-3887<br>ehs@sika-corp.com |
| Recommended use of the chemical and restrictions on use | : | For further information, refer to the product technical data sheet. |

## 2. Hazards identification

### GHS Classification

| | |
|---|---|
| Skin irritation, Category 2 | H315: Causes skin irritation. |
| Serious eye damage, Category 1 | H318: Causes serious eye damage. |
| Carcinogenicity, Category 1A | H350: May cause cancer. |
| Specific target organ systemic toxicity - single exposure, Category 3, Respiratory system | H335: May cause respiratory irritation. |

### GHS Label element

Hazard pictograms :



Signal Word : Danger

Hazard Statements : H315 Causes skin irritation.
H318 Causes serious eye damage.
H335 May cause respiratory irritation.
H350 May cause cancer.

Precautionary Statements : **Prevention:**
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.
P264 Wash skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear eye protection/ face protection.

P280 Wear protective gloves.
P281 Use personal protective equipment as required.
**Response:**
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
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.
P310 Immediately call a POISON CENTER or doctor/ physician.
P332 + P313 If skin irritation occurs: Get medical advice/ attention.
P362 Take off contaminated clothing and wash before reuse.
**Storage:**
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.
**Disposal:**
P501 Dispose of contents/ container to an approved waste disposal plant.

See Section 11 for more detailed information on health effects and symptoms.

## 3. Composition/information on ingredients

**Hazardous ingredients**

| Chemical Name | CAS-No. | Concentration (%) |
|---|---|---|
| Quartz (SiO2) | 14808-60-7 | >= 50 - <= 100 % |
| Portland cement | 65997-15-1 | >= 25 - < 50 % |
| Quartz (SiO2) <5µm | 14808-60-7 | >= 0 - < 1 % |

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.

## 4. First aid measures

If inhaled : Move to fresh air.
Consult a physician after significant exposure.

In case of skin contact : Take off contaminated clothing and shoes immediately.
Wash off with soap and plenty of water.
If symptoms persist, call a physician.

In case of eye contact : Small amounts splashed into eyes can cause irreversible tissue damage and blindness.
In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

| | | |
|---|---|---|
| | | Continue rinsing eyes during transport to hospital.<br>Remove contact lenses.<br>Keep eye wide open while rinsing. |
| If swallowed | : | Clean mouth with water and drink afterwards plenty of water.<br>Induce vomiting immediately and call a physician.<br>Do NOT induce vomiting.<br>Do not give milk or alcoholic beverages.<br>Never give anything by mouth to an unconscious person. |
| Most important symptoms and effects, both acute and delayed | : | irritant effects<br>carcinogenic effects<br><br>Cough<br>Respiratory disorder<br>Excessive lachrymation<br>Erythema<br>Dermatitis<br>See Section 11 for more detailed information on health effects and symptoms. |
| Protection of first-aiders | : | Move out of dangerous area.<br>Consult a physician.<br>Show this material safety data sheet to the doctor in attendance. |
| Notes to physician | : | Treat symptomatically. |

## 5. Fire-fighting measures

| | | |
|---|---|---|
| Suitable extinguishing media | : | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. |
| Specific extinguishing methods | : | Collect contaminated fire extinguishing water separately. This must not be discharged into drains.<br>Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. |
| Special protective equipment for fire-fighters | : | In the event of fire, wear self-contained breathing apparatus. |

## 6. Accidental release measures

| | | |
|---|---|---|
| Personal precautions, protective equipment and emergency procedures | : | Use personal protective equipment.<br>Avoid breathing dust.<br>Deny access to unprotected persons. |
| Environmental precautions | : | Do not flush into surface water or sanitary sewer system.<br>If the product contaminates rivers and lakes or drains inform respective authorities.<br>Local authorities should be advised if significant spillages cannot be contained. |
| Methods and materials for containment and cleaning up | : | Pick up and arrange disposal without creating dust.<br>Keep in suitable, closed containers for disposal. |

## 7. Handling and storage

Advice on safe handling : Do not breathe vapors/dust.
Avoid exceeding the given occupational exposure limits (see section 8).
Do not get in eyes, on skin, or on clothing.
For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.
Follow standard hygiene measures when handling chemical products.

Conditions for safe storage : Prevent unauthorized access.
Store in original container.
Keep in a well-ventilated place.
Observe label precautions.
Store in accordance with local regulations.

Materials to avoid : no data available

## 8. Exposure controls/personal protection

| Component | CAS-No. | Basis ** | Value | Exposure limit(s)* / Form of exposure |
|---|---|---|---|---|
| Quartz (SiO2) | 14808-60-7 | ACGIH | TWA | 0.025 mg/m3<br>Respirable fraction |
| | | OSHA Z-3 | TWA | 30 mg/m3/%SiO2+2<br>total dust |
| | | OSHA Z-3 | TWA | 10 mg/m3/%SiO2+2<br>respirable |
| | | OSHA Z-3 | TWA | 250 mppcf/%SiO2+5<br>respirable |
| | | OSHA P0 | TWA | 0.1 mg/m3<br>Respirable fraction |
| Portland cement | 65997-15-1 | ACGIH | TWA | 1 mg/m3<br>Respirable fraction |
| | | OSHA P0 | TWA | 10 mg/m3<br>Total |
| | | OSHA P0 | TWA | 5 mg/m3<br>Respirable fraction |
| | | OSHA Z-1 | TWA | 15 mg/m3<br>total dust |

| | | | | |
|---|---|---|---|---|
| | | | | |
| | | OSHA Z-1 | TWA | 5 mg/m3<br>respirable fraction |
| | | OSHA Z-3 | TWA | 50 Million particles<br>per cubic foot<br>Dust |
| calcium sulfate | 7778-18-9 | OSHA Z-1 | TWA | 15 mg/m3<br>total dust |
| | | OSHA Z-1 | TWA | 5 mg/m3<br>respirable fraction |
| | | OSHA P0 | TWA | 15 mg/m3<br>Total |
| | | OSHA P0 | TWA | 5 mg/m3<br>Respirable fraction |
| | | ACGIH | TWA | 10 mg/m3<br>Inhalable fraction |
| Quartz (SiO2) <5µm | 14808-60-7 | ACGIH | TWA | 0.025 mg/m3<br>Respirable fraction |
| | | OSHA Z-3 | TWA | 30 mg/m3/%SiO2+2<br>total dust |
| | | OSHA Z-3 | TWA | 10 mg/m3/%SiO2+2<br>respirable |
| | | OSHA Z-3 | TWA | 250 mppcf/%SiO2+5<br>respirable |
| | | OSHA P0 | TWA | 0.1 mg/m3<br>Respirable fraction |

*The above mentioned values are in accordance with the legislation in effect at the date of the release of this safety data sheet.

**__Basis__
ACGIH. Threshold Limit Values (TLV)
OSHA P0. Table Z-1, Limit for Air Contaminat (1989 Vacated Values)
OSHA P1. Permissible Exposure Limits (PEL), Table Z-1, Limit for Air Contaminant
OSHA P2. Permissible Exposure Limits (PEL), Table Z-2
OSHA Z3. Table Z-3, Mineral Dust

**Engineering measures** : Use of adequate ventilation should be sufficient to control worker exposure to airborne contaminants. If the use of this product generates dust, fumes, gas, vapor or mist, use

process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

**Personal protective equipment**

| | | |
|---|---|---|
| Respiratory protection | : | Use a properly fitted NIOSH approved air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.<br><br>The filter class for the respirator must be suitable for the maximum expected contaminant concentration (gas/vapor/aerosol/particulates) that may arise when handling the product. If this concentration is exceeded, self-contained breathing apparatus must be used. |
| Hand protection<br>Remarks | : | 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. |
| Eye protection | : | Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary. |
| Skin and body protection | : | Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. |
| Hygiene measures | : | Avoid contact with skin, eyes and clothing.<br>Wash hands before breaks and immediately after handling the product.<br>Remove contaminated clothing and protective equipment before entering eating areas.<br>Wash thoroughly after handling.<br>Avoid breathing dust. |

## 9. Physical and chemical properties

| | | |
|---|---|---|
| Appearance | : | powder |
| Color | : | gray |
| Odor | : | odorless |
| Odor Threshold | : | no data available |
| Flash point | : | Note: not applicable |
| Ignition temperature | : | no data available |
| Decomposition temperature | : | no data available |
| Lower explosion limit (Vol%) | : | no data available |
| Upper explosion limit (Vol%) | : | no data available |

| | | |
|---|---|---|
| Flammability (solid, gas) | : | no data available |
| Oxidizing properties | : | no data available |
| Autoignition temperature | : | no data available |
| pH | : | Note: not applicable |
| Melting point/range / Freezing point | : | no data available |
| Boiling point/boiling range | : | no data available |
| Vapor pressure | : | no data available |
| Density | : | ca.2.75 g/cm3<br>at 73 °F (23 °C) |
| Water solubility | : | Note: insoluble |
| Partition coefficient: n-octanol/water | : | no data available |
| Viscosity, dynamic | : | no data available |
| Viscosity, kinematic | : | no data available |
| Relative vapor density | : | no data available |
| Evaporation rate | : | no data available |
| Burning rate | : | no data available |
| Volatile organic compounds (VOC) content | : | < 20 g/l<br>A+B Combined |

## 10. Stability and reactivity

| | | |
|---|---|---|
| Reactivity | : | No dangerous reaction known under conditions of normal use. |
| Chemical stability | : | The product is chemically stable. |
| Possibility of hazardous reactions | : | Stable under recommended storage conditions. |
| Conditions to avoid | : | no data available |
| Incompatible materials | : | no data available |

## 11. Toxicological information

### Acute toxicity

**Product**

| | | |
|---|---|---|
| Acute oral toxicity | : | no data available |
| Acute inhalation toxicity | : | no data available |

Acute dermal toxicity : no data available

**Skin corrosion/irritation**

**Product**

Causes skin irritation.

**Serious eye damage/eye irritation**

**Product**

Causes serious eye damage.

**Respiratory or skin sensitization**

**Product**

no data available

**Germ cell mutagenicity**

**Product**

Mutagenicity : no data available

**Carcinogenicity**

**Product**

Carcinogenicity : May cause cancer.

| | | |
|---|---|---|
| **IARC** | Group 1: Carcinogenic to humans | |
| | Quartz (SiO2) | 14808-60-7 |
| | Quartz (SiO2) <5µm | 14808-60-7 |
| **NTP** | Known to be human carcinogen | |
| | Quartz (SiO2) | 14808-60-7 |
| | Quartz (SiO2) <5µm | 14808-60-7 |

**Reproductive Toxicity/Fertility**

**Product**

Reproductive toxicity : no data available

**Reproductive Toxicity/Development/Teratogenicity**

**Product**

Teratogenicity : no data available

**STOT-single exposure**

**Product**

Assessment: May cause respiratory irritation.

**STOT-repeated exposure**

Prolonged exposure can cause silicosis.

**Product**

Assessment: no data available

**Aspiration toxicity**

**Product**

no data available

## 12. Ecological information

| | |
|---|---|
| Other information | Do not empty into drains; dispose of this material and its container in a safe way. |

## 13. Disposal considerations

**Disposal methods**

| | | |
|---|---|---|
| Waste from residues | : | 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. |
| Contaminated packaging | : | Empty containers should be taken to an approved waste handling site for recycling or disposal. |

## 14. Transport information

**DOT**
Not dangerous goods
**IATA**
Not dangerous goods
**IMDG**
Not dangerous goods

**Special precautions for user**
no data available

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**
not applicable

## 15. Regulatory information

**TSCA list** : All chemical substances in this product are either listed on the TSCA Inventory or are in compliance with a TSCA Inventory exemption.

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

**CERCLA Reportable Quantity**

This material does not contain any components with a CERCLA RQ.

**SARA304 Reportable Quantity**

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

**SARA 311/312 Hazards** : Acute Health Hazard
Chronic Health Hazard

**SARA 302** : SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**SARA 313** : SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**Clean Air Act**

**Ozone-Depletion Potential** This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 12 (40 CFR 61).
This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

**Clean Water Act**

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.
This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.
This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

**California Prop 65** WARNING! This product contains a chemical known in the State of California to cause cancer.
WARNING: This product contains a chemical known in the State of California to cause birth defects or other reproductive harm.

## 16. Other information

**HMIS Classification**

| | | |
|---|---|---|
| Health | * | 3 |
| Flammability | | 0 |
| Physical Hazard | | 0 |
| Personal Protection | | X |

**Caution:** HMIS® rating is based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® rating is not required

on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® rating is to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). Please note HMIS® attempts to convey full health warning information to all employees.

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**Notes to Reader**

The information contained in this Safety Data Sheet applies only to the actual Sika Corporation ("Sika") product identified and described herein. This information is not intended to address, nor does it address the use or application of the identified Sika product in combination with any other material, product or process. All of the information set forth herein is based on technical data regarding the identified product that Sika believes to be reliable as of the date hereof. Prior to each use of any Sika product, the user must always read and follow the warnings and instructions on the product's current Product Data Sheet, product label and Safety Data Sheet for each Sika product, which are available at web site and/or telephone number listed in Section 1 of this SDS.

SIKA MAKES NO WARRANTIES EXPRESS OR IMPLIED AND ASSUMES NO LIABILITY ARISING FROM THIS INFORMATION OR ITS USE. SIKA SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES AND SHALL NOT BE RESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHTS HELD BY OTHERS.

All sales of Sika products are subject to its current terms and conditions of sale available at www.sikausa.com or 201-933-8800.

Revision Date 11/25/2013

Material number: 453774

## 1. Identification

| | | |
|---|---|---|
| Product name | : | SikaTop®-121 PLUS Part B |
| Supplier | : | Sika Corporation |
| Address | : | 201 Polito Avenue<br>Lyndhurst, NJ 07071<br>USA<br>www.sikausa.com |
| Telephone | : | (201) 933-8800 |
| Telefax | : | (201) 804-1076 |
| Emergency telephone | : | CHEMTREC: 800-424-9300<br>INTERNATIONAL: 703-527-3887<br>ehs@sika-corp.com |
| Recommended use of the chemical and restrictions on use | : | For further information, refer to the product technical data sheet. |

## 2. Hazards identification

### GHS Classification

| | |
|---|---|
| Skin irritation , Category 2 | H315: Causes skin irritation. |
| Serious eye damage , Category 1 | H318: Causes serious eye damage. |
| Carcinogenicity , Category 1A | H350: May cause cancer. |
| Specific target organ systemic toxicity - single exposure , Category 3, Respiratory system | H335: May cause respiratory irritation. |

### GHS Label element

Hazard pictograms :



Signal Word : Danger

Hazard Statements : H315 Causes skin irritation.
H318 Causes serious eye damage.
H335 May cause respiratory irritation.
H350 May cause cancer.

Precautionary Statements : **Prevention:**
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.
P264 Wash skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear eye protection/ face protection.

P280 Wear protective gloves.
P281 Use personal protective equipment as required.
**Response:**
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
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.
P310 Immediately call a POISON CENTER or doctor/ physician.
P332 + P313 If skin irritation occurs: Get medical advice/ attention.
P362 Take off contaminated clothing and wash before reuse.
**Storage:**
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.
**Disposal:**
P501 Dispose of contents/ container to an approved waste disposal plant.

See Section 11 for more detailed information on health effects and symptoms.

## 3. Composition/information on ingredients

**Hazardous ingredients**

| Chemical Name | CAS-No. | Concentration (%) |
|---|---|---|
| Quartz (SiO2) | 14808-60-7 | >= 50 - <= 100 % |
| Portland cement | 65997-15-1 | >= 25 - < 50 % |
| Calcium hydroxide | 1305-62-0 | >= 1 - < 2 % |
| Quartz (SiO2) <5µm | 14808-60-7 | >= 0 - < 1 % |

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.

## 4. First aid measures

If inhaled : Move to fresh air.
Consult a physician after significant exposure.

In case of skin contact : Take off contaminated clothing and shoes immediately.
Wash off with soap and plenty of water.
If symptoms persist, call a physician.

In case of eye contact : Small amounts splashed into eyes can cause irreversible tissue damage and blindness.
In the case of contact with eyes, rinse immediately with plenty

| | | |
|---|---|---|
| | | of water and seek medical advice.<br>Continue rinsing eyes during transport to hospital.<br>Remove contact lenses.<br>Keep eye wide open while rinsing. |
| If swallowed | : | Clean mouth with water and drink afterwards plenty of water.<br>Induce vomiting immediately and call a physician.<br>Do NOT induce vomiting.<br>Do not give milk or alcoholic beverages.<br>Never give anything by mouth to an unconscious person. |
| Most important symptoms and effects, both acute and delayed | : | irritant effects<br>carcinogenic effects<br><br>Cough<br>Respiratory disorder<br>Excessive lachrymation<br>Erythema<br>Dermatitis<br>See Section 11 for more detailed information on health effects and symptoms. |
| Protection of first-aiders | : | Move out of dangerous area.<br>Consult a physician.<br>Show this material safety data sheet to the doctor in attendance. |
| Notes to physician | : | Treat symptomatically. |

## 5. Fire-fighting measures

| | | |
|---|---|---|
| Suitable extinguishing media | : | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. |
| Specific extinguishing methods | : | Collect contaminated fire extinguishing water separately. This must not be discharged into drains.<br>Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. |
| Special protective equipment for fire-fighters | : | In the event of fire, wear self-contained breathing apparatus. |

## 6. Accidental release measures

| | | |
|---|---|---|
| Personal precautions, protective equipment and emergency procedures | : | Use personal protective equipment.<br>Avoid breathing dust.<br>Deny access to unprotected persons. |
| Environmental precautions | : | Do not flush into surface water or sanitary sewer system.<br>If the product contaminates rivers and lakes or drains inform respective authorities.<br>Local authorities should be advised if significant spillages cannot be contained. |
| Methods and materials for | : | Pick up and arrange disposal without creating dust. |

containment and cleaning up Keep in suitable, closed containers for disposal.

## 7. Handling and storage

Advice on safe handling : Do not breathe vapors/dust.
Avoid exceeding the given occupational exposure limits (see section 8).
Do not get in eyes, on skin, or on clothing.
For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.
Follow standard hygiene measures when handling chemical products.

Conditions for safe storage : Prevent unauthorized access.
Store in original container.
Keep in a well-ventilated place.
Observe label precautions.
Store in accordance with local regulations.

Materials to avoid : no data available

## 8. Exposure controls/personal protection

| Component | CAS-No. | Basis ** | Value | Exposure limit(s)* / Form of exposure |
|---|---|---|---|---|
| Quartz (SiO2) | 14808-60-7 | ACGIH | TWA | 0.025 mg/m3<br>Respirable fraction |
| | | OSHA Z-3 | TWA | 30 mg/m3/%SiO2+2<br>total dust |
| | | OSHA Z-3 | TWA | 10 mg/m3/%SiO2+2<br>respirable |
| | | OSHA Z-3 | TWA | 250 mppcf/%SiO2+5<br>respirable |
| | | OSHA P0 | TWA | 0.1 mg/m3<br>Respirable fraction |
| Portland cement | 65997-15-1 | ACGIH | TWA | 1 mg/m3<br>Respirable fraction |
| | | OSHA P0 | TWA | 10 mg/m3<br>Total |
| | | OSHA P0 | TWA | 5 mg/m3<br>Respirable fraction |
| | | OSHA Z-1 | TWA | 15 mg/m3 |

| | | | | |
|---|---|---|---|---|
| | | | | total dust |
| | | OSHA Z-1 | TWA | 5 mg/m3<br>respirable fraction |
| | | OSHA Z-3 | TWA | 50 Million particles per cubic foot<br>Dust |
| Calcium hydroxide | 1305-62-0 | ACGIH | TWA | 5 mg/m3 |
| | | OSHA Z-1 | TWA | 15 mg/m3<br>total dust |
| | | OSHA Z-1 | TWA | 5 mg/m3<br>respirable fraction |
| | | OSHA P0 | TWA | 5 mg/m3 |
| Quartz (SiO2) <5µm | 14808-60-7 | ACGIH | TWA | 0.025 mg/m3<br>Respirable fraction |
| | | OSHA Z-3 | TWA | 30 mg/m3/%SiO2+2<br>total dust |
| | | OSHA Z-3 | TWA | 10 mg/m3/%SiO2+2<br>respirable |
| | | OSHA Z-3 | TWA | 250 mppcf/%SiO2+5<br>respirable |
| | | OSHA P0 | TWA | 0.1 mg/m3<br>Respirable fraction |

*The above mentioned values are in accordance with the legislation in effect at the date of the release of this safety data sheet.

**__Basis__
ACGIH. Threshold Limit Values (TLV)
OSHA P0. Table Z-1, Limit for Air Contaminat (1989 Vacated Values)
OSHA P1. Permissible Exposure Limits (PEL), Table Z-1, Limit for Air Contaminant
OSHA P2. Permissible Exposure Limits (PEL), Table Z-2
OSHA Z3. Table Z-3, Mineral Dust

**Engineering measures** : Use of adequate ventilation should be sufficient to control worker exposure to airborne contaminants. If the use of this product generates dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

**Personal protective equipment**

| | | |
|---|---|---|
| Respiratory protection | : | Use a properly fitted NIOSH approved air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.<br><br>The filter class for the respirator must be suitable for the maximum expected contaminant concentration (gas/vapor/aerosol/particulates) that may arise when handling the product. If this concentration is exceeded, self-contained breathing apparatus must be used. |
| Hand protection<br>Remarks | : | 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. |
| Eye protection | : | Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary. |
| Skin and body protection | : | Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. |
| Hygiene measures | : | Avoid contact with skin, eyes and clothing.<br>Wash hands before breaks and immediately after handling the product.<br>Remove contaminated clothing and protective equipment before entering eating areas.<br>Wash thoroughly after handling.<br>Avoid breathing dust. |

## 9. Physical and chemical properties

| | | |
|---|---|---|
| Appearance | : | powder |
| Color | : | gray |
| Odor | : | odorless |
| Odor Threshold | : | no data available |
| Flash point | : | Note: not applicable |
| Ignition temperature | : | no data available |
| Decomposition temperature | : | no data available |
| Lower explosion limit (Vol%) | : | no data available |
| Upper explosion limit (Vol%) | : | no data available |
| Flammability (solid, gas) | : | no data available |
| Oxidizing properties | : | no data available |
| Autoignition temperature | : | no data available |

| | | |
|---|---|---|
| pH | : | Note: not applicable |
| Melting point/range / Freezing point | : | no data available |
| Boiling point/boiling range | : | no data available |
| Vapor pressure | : | no data available |
| Density | : | ca.2.75 g/cm3<br>at 73 °F (23 °C) |
| Water solubility | : | Note: insoluble |
| Partition coefficient: n-octanol/water | : | no data available |
| Viscosity, dynamic | : | no data available |
| Viscosity, kinematic | : | no data available |
| Relative vapor density | : | no data available |
| Evaporation rate | : | no data available |
| Burning rate | : | no data available |
| Volatile organic compounds (VOC) content | : | < 20 g/l<br>A+B Combined |

## 10. Stability and reactivity

| | | |
|---|---|---|
| Reactivity | : | No dangerous reaction known under conditions of normal use. |
| Chemical stability | : | The product is chemically stable. |
| Possibility of hazardous reactions | : | Stable under recommended storage conditions. |
| Conditions to avoid | : | no data available |
| Incompatible materials | : | no data available |

## 11. Toxicological information

**Acute toxicity**

**Product**

| | | |
|---|---|---|
| Acute oral toxicity | : | no data available |
| Acute inhalation toxicity | : | no data available |
| Acute dermal toxicity | : | no data available |

**Skin corrosion/irritation**

**Product**

Causes skin irritation.

**Serious eye damage/eye irritation**

**Product**

Causes serious eye damage.

**Respiratory or skin sensitization**

**Product**

no data available

**Germ cell mutagenicity**

**Product**

Mutagenicity : no data available

**Carcinogenicity**

**Product**

Carcinogenicity : May cause cancer.

| | | |
|---|---|---|
| **IARC** | Group 1: Carcinogenic to humans | |
| | Quartz (SiO2) | 14808-60-7 |
| | Quartz (SiO2) <5µm | 14808-60-7 |
| **NTP** | Known to be human carcinogen | |
| | Quartz (SiO2) | 14808-60-7 |
| | Quartz (SiO2) <5µm | 14808-60-7 |

**Reproductive Toxicity/Fertility**

**Product**

Reproductive toxicity : no data available

**Reproductive Toxicity/Development/Teratogenicity**

**Product**

Teratogenicity : no data available

**STOT-single exposure**

**Product**

Assessment: May cause respiratory irritation.

**STOT-repeated exposure**

Prolonged exposure can cause silicosis.

**Product**

Assessment: no data available

**Aspiration toxicity**

**Product**

no data available

## 12. Ecological information

| | |
|---|---|
| Other information | Do not empty into drains; dispose of this material and its container in a safe way. |

## 13. Disposal considerations

**Disposal methods**

| | | |
|---|---|---|
| Waste from residues | : | 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. |
| Contaminated packaging | : | Empty containers should be taken to an approved waste handling site for recycling or disposal. |

## 14. Transport information

**DOT**
Not dangerous goods
**IATA**
Not dangerous goods
**IMDG**
Not dangerous goods

**Special precautions for user**
no data available

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**
not applicable

## 15. Regulatory information

**TSCA list** : All chemical substances in this product are either listed on the TSCA Inventory or are in compliance with a TSCA Inventory exemption.

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

**CERCLA Reportable Quantity**

This material does not contain any components with a CERCLA RQ.

**SARA304 Reportable Quantity**
This material does not contain any components with a section 304 EHS RQ.

**SARA 311/312 Hazards** : Acute Health Hazard
Chronic Health Hazard

**SARA 302** : SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**SARA 313** : SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**Clean Air Act**

**Ozone-Depletion Potential** This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 12 (40 CFR 61).
This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

**Clean Water Act**
This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.
This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.
This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

**California Prop 65** WARNING! This product contains a chemical known in the State of California to cause cancer.
WARNING: This product contains a chemical known in the State of California to cause birth defects or other reproductive harm.

## 16. Other information

**HMIS Classification**

| | | |
|---|---|---|
| **Health** | * | 3 |
| **Flammability** | | 0 |
| **Physical Hazard** | | 0 |
| **Personal Protection** | | X |

**Caution:** HMIS® rating is based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® rating is not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® rating is to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). Please note HMIS® attempts to convey full health warning information to all employees.

**Notes to Reader**

The information contained in this Safety Data Sheet applies only to the actual Sika Corporation ("Sika") product identified and described herein. This information is not intended to address, nor does it address the use or application of the identified Sika product in combination with any other material, product or process. All of the information set forth herein is based on technical data regarding the identified product that Sika believes to be reliable as of the date hereof. Prior to each use of any Sika product, the user must always read and follow the warnings and instructions on the product's current Product Data Sheet, product label and Safety Data Sheet for each Sika product, which are available at web site and/or telephone number listed in Section 1 of this SDS.

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All sales of Sika products are subject to its current terms and conditions of sale available at www.sikausa.com or 201-933-8800.

Revision Date 11/25/2013

Material number: 453758

## 1. Identification

| | | |
|---|---|---|
| Product name | : | SikaTop®-123 PLUS Part B |
| Supplier | : | Sika Corporation |
| Address | : | 201 Polito Avenue<br>Lyndhurst, NJ 07071<br>USA<br>www.sikausa.com |
| Telephone | : | (201) 933-8800 |
| Telefax | : | (201) 804-1076 |
| Emergency telephone | : | CHEMTREC: 800-424-9300<br>INTERNATIONAL: 703-527-3887<br>ehs@sika-corp.com |
| Recommended use of the chemical and restrictions on use | : | For further information, refer to the product technical data sheet. |

## 2. Hazards identification

### GHS Classification

| | |
|---|---|
| Skin irritation , Category 2 | H315: Causes skin irritation. |
| Serious eye damage , Category 1 | H318: Causes serious eye damage. |
| Carcinogenicity , Category 1A | H350: May cause cancer. |
| Specific target organ systemic toxicity - single exposure , Category 3, Respiratory system | H335: May cause respiratory irritation. |

### GHS Label element

Hazard pictograms :



Signal Word : Danger

Hazard Statements : H315 Causes skin irritation.
H318 Causes serious eye damage.
H335 May cause respiratory irritation.
H350 May cause cancer.

Precautionary Statements : **Prevention:**
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.
P264 Wash skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.

P280 Wear eye protection/ face protection.
P280 Wear protective gloves.
P281 Use personal protective equipment as required.
**Response:**
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
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.
P310 Immediately call a POISON CENTER or doctor/ physician.
P332 + P313 If skin irritation occurs: Get medical advice/ attention.
P362 Take off contaminated clothing and wash before reuse.
**Storage:**
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.
**Disposal:**
P501 Dispose of contents/ container to an approved waste disposal plant.

See Section 11 for more detailed information on health effects and symptoms.

## 3. Composition/information on ingredients

**Hazardous ingredients**

| Chemical Name | CAS-No. | Concentration (%) |
|---|---|---|
| Quartz (SiO2) | 14808-60-7 | >= 25 - < 50 % |
| Portland cement | 65997-15-1 | >= 25 - < 50 % |
| Quartz (SiO2) <5µm | 14808-60-7 | >= 0 - < 1 % |

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.

## 4. First aid measures

If inhaled : Move to fresh air.
Consult a physician after significant exposure.

In case of skin contact : Take off contaminated clothing and shoes immediately.
Wash off with soap and plenty of water.
If symptoms persist, call a physician.

In case of eye contact : Small amounts splashed into eyes can cause irreversible tissue damage and blindness.

| | | |
|---|---|---|
| | | In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.<br>Continue rinsing eyes during transport to hospital.<br>Remove contact lenses.<br>Keep eye wide open while rinsing. |
| If swallowed | : | Clean mouth with water and drink afterwards plenty of water.<br>Induce vomiting immediately and call a physician.<br>Do NOT induce vomiting.<br>Do not give milk or alcoholic beverages.<br>Never give anything by mouth to an unconscious person. |
| Most important symptoms and effects, both acute and delayed | : | irritant effects<br>carcinogenic effects<br><br>Cough<br>Respiratory disorder<br>Excessive lachrymation<br>Erythema<br>Dermatitis<br>See Section 11 for more detailed information on health effects and symptoms. |
| Protection of first-aiders | : | Move out of dangerous area.<br>Consult a physician.<br>Show this material safety data sheet to the doctor in attendance. |
| Notes to physician | : | Treat symptomatically. |

## 5. Fire-fighting measures

| | | |
|---|---|---|
| Suitable extinguishing media | : | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. |
| Specific extinguishing methods | : | Collect contaminated fire extinguishing water separately. This must not be discharged into drains.<br>Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. |
| Special protective equipment for fire-fighters | : | In the event of fire, wear self-contained breathing apparatus. |

## 6. Accidental release measures

| | | |
|---|---|---|
| Personal precautions, protective equipment and emergency procedures | : | Use personal protective equipment.<br>Avoid breathing dust.<br>Deny access to unprotected persons. |
| Environmental precautions | : | Do not flush into surface water or sanitary sewer system.<br>If the product contaminates rivers and lakes or drains inform respective authorities.<br>Local authorities should be advised if significant spillages cannot be contained. |

| | | |
|---|---|---|
| Methods and materials for containment and cleaning up | : | Pick up and arrange disposal without creating dust.<br>Keep in suitable, closed containers for disposal. |

## 7. Handling and storage

| | | |
|---|---|---|
| Advice on safe handling | : | Do not breathe vapors/dust.<br>Avoid exceeding the given occupational exposure limits (see section 8).<br>Do not get in eyes, on skin, or on clothing.<br>For personal protection see section 8.<br>Smoking, eating and drinking should be prohibited in the application area.<br>Follow standard hygiene measures when handling chemical products. |
| Conditions for safe storage | : | Prevent unauthorized access.<br>Store in original container.<br>Keep in a well-ventilated place.<br>Observe label precautions.<br>Store in accordance with local regulations. |
| Materials to avoid | : | no data available |

## 8. Exposure controls/personal protection

| Component | CAS-No. | Basis ** | Value | Exposure limit(s)* / Form of exposure |
|---|---|---|---|---|
| Quartz (SiO2) | 14808-60-7 | ACGIH | TWA | 0.025 mg/m3<br>Respirable fraction |
| | | OSHA Z-3 | TWA | 30 mg/m3 /<br>%SiO2+2<br>total dust |
| | | OSHA Z-3 | TWA | 10 mg/m3 /<br>%SiO2+2<br>respirable |
| | | OSHA Z-3 | TWA | 250 mppcf /<br>%SiO2+5<br>respirable |
| | | OSHA P0 | TWA | 0.1 mg/m3<br>Respirable fraction |
| Portland cement | 65997-15-1 | ACGIH | TWA | 1 mg/m3<br>Respirable fraction |
| | | OSHA P0 | TWA | 10 mg/m3<br>Total |

| | | | | |
|---|---|---|---|---|
| | | OSHA P0 | TWA | 5 mg/m3<br>Respirable fraction |
| | | OSHA Z-1 | TWA | 15 mg/m3<br>total dust |
| | | OSHA Z-1 | TWA | 5 mg/m3<br>respirable fraction |
| | | OSHA Z-3 | TWA | 50 Million particles per cubic foot<br>Dust |
| calcium sulfate | 7778-18-9 | OSHA Z-1 | TWA | 15 mg/m3<br>total dust |
| | | OSHA Z-1 | TWA | 5 mg/m3<br>respirable fraction |
| | | OSHA P0 | TWA | 15 mg/m3<br>Total |
| | | OSHA P0 | TWA | 5 mg/m3<br>Respirable fraction |
| | | ACGIH | TWA | 10 mg/m3<br>Inhalable fraction |
| magnesium carbonate | 546-93-0 | OSHA Z-1 | TWA | 15 mg/m3<br>total dust |
| | | OSHA Z-1 | TWA | 5 mg/m3<br>respirable fraction |
| | | OSHA P0 | TWA | 15 mg/m3<br>Total |
| | | OSHA P0 | TWA | 5 mg/m3<br>Respirable fraction |
| fumes, silica | 69012-64-2 | OSHA Z-3 | TWA | 20 Million particles per cubic foot<br>Dust |
| | | OSHA Z-3 | TWA | 80 mg/m3 / %SiO2<br>Dust |
| Quartz (SiO2) <5µm | 14808-60-7 | ACGIH | TWA | 0.025 mg/m3<br>Respirable fraction |
| | | OSHA Z-3 | TWA | 30 mg/m3 / %SiO2+2 |

| | | | | |
|---|---|---|---|---|
| | | | | total dust |
| | | OSHA Z-3 | TWA | 10 mg/m3 / %SiO2+2 respirable |
| | | OSHA Z-3 | TWA | 250 mppcf / %SiO2+5 respirable |
| | | OSHA P0 | TWA | 0.1 mg/m3 Respirable fraction |

*The above mentioned values are in accordance with the legislation in effect at the date of the release of this safety data sheet.

**__Basis__
ACGIH. Threshold Limit Values (TLV)
OSHA P0. Table Z-1, Limit for Air Contaminat (1989 Vacated Values)
OSHA P1. Permissible Exposure Limits (PEL), Table Z-1, Limit for Air Contaminant
OSHA P2. Permissible Exposure Limits (PEL), Table Z-2
OSHA Z3. Table Z-3, Mineral Dust

**Engineering measures** : Use of adequate ventilation should be sufficient to control worker exposure to airborne contaminants. If the use of this product generates dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

**Personal protective equipment**

Respiratory protection : Use a properly fitted NIOSH approved air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.

The filter class for the respirator must be suitable for the maximum expected contaminant concentration (gas/vapor/aerosol/particulates) that may arise when handling the product. If this concentration is exceeded, self-contained breathing apparatus must be used.

Hand protection
Remarks : 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.

Eye protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary.

Skin and body protection : Choose body protection in relation to its type, to the

| | | |
|---|---|---|
| | | concentration and amount of dangerous substances, and to the specific work-place. |
| Hygiene measures | : | Avoid contact with skin, eyes and clothing.<br>Wash hands before breaks and immediately after handling the product.<br>Remove contaminated clothing and protective equipment before entering eating areas.<br>Wash thoroughly after handling.<br>Avoid breathing dust. |

## 9. Physical and chemical properties

| | | |
|---|---|---|
| Appearance | : | powder |
| Color | : | gray |
| Odor | : | odorless |
| Odor Threshold | : | no data available |
| Flash point | : | Note: not applicable |
| Ignition temperature | : | no data available |
| Decomposition temperature | : | no data available |
| Lower explosion limit (Vol%) | : | no data available |
| Upper explosion limit (Vol%) | : | no data available |
| Flammability (solid, gas) | : | no data available |
| Oxidizing properties | : | no data available |
| Autoignition temperature | : | no data available |
| pH | : | Note: not applicable |
| Melting point/range / Freezing point | : | no data available |
| Boiling point/boiling range | : | no data available |
| Vapor pressure | : | no data available |
| Density | : | ca.2.7 g/cm3<br>at 73 °F (23 °C) |
| Water solubility | : | Note: insoluble |
| Partition coefficient: n-octanol/water | : | no data available |
| Viscosity, dynamic | : | no data available |
| Viscosity, kinematic | : | no data available |

| | | |
|---|---|---|
| Relative vapor density | : | no data available |
| Evaporation rate | : | no data available |
| Burning rate | : | no data available |
| Volatile organic compounds (VOC) content | : | < 20 g/l<br>A+B Combined |

## 10. Stability and reactivity

| | | |
|---|---|---|
| Reactivity | : | No dangerous reaction known under conditions of normal use. |
| Chemical stability | : | The product is chemically stable. |
| Possibility of hazardous reactions | : | Stable under recommended storage conditions. |
| Conditions to avoid | : | no data available |
| Incompatible materials | : | no data available |

## 11. Toxicological information

### Acute toxicity

**Product**

| | | |
|---|---|---|
| Acute oral toxicity | : | no data available |
| Acute inhalation toxicity | : | no data available |
| Acute dermal toxicity | : | no data available |

### Skin corrosion/irritation

**Product**

Causes skin irritation.

### Serious eye damage/eye irritation

**Product**

Causes serious eye damage.

### Respiratory or skin sensitization

**Product**

no data available

### Germ cell mutagenicity

**Product**

Mutagenicity : no data available

**Carcinogenicity**

**Product**

Carcinogenicity : May cause cancer.

| | | |
|---|---|---|
| **IARC** | Group 1: Carcinogenic to humans | |
| | Quartz (SiO2) | 14808-60-7 |
| | Quartz (SiO2) <5µm | 14808-60-7 |
| **NTP** | Known to be human carcinogen | |
| | Quartz (SiO2) | 14808-60-7 |
| | Quartz (SiO2) <5µm | 14808-60-7 |

**Reproductive Toxicity/Fertility**

**Product**

Reproductive toxicity : no data available

**Reproductive Toxicity/Development/Teratogenicity**

**Product**

Teratogenicity : no data available

**STOT-single exposure**

**Product**

Assessment: May cause respiratory irritation.

**STOT-repeated exposure**

Prolonged exposure can cause silicosis.

**Product**

Assessment: no data available

**Aspiration toxicity**

**Product**

no data available

## 12. Ecological information

Other information Do not empty into drains; dispose of this material and its container in a safe way.

## 13. Disposal considerations

**Disposal methods**

| | | |
|---|---|---|
| Waste from residues | : | 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. |
| Contaminated packaging | : | Empty containers should be taken to an approved waste handling site for recycling or disposal. |

## 14. Transport information

**DOT**
Not dangerous goods
**IATA**
Not dangerous goods
**IMDG**
Not dangerous goods

**Special precautions for user**
no data available

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**
not applicable

## 15. Regulatory information

**TSCA list** : All chemical substances in this product are either listed on the TSCA Inventory or are in compliance with a TSCA Inventory exemption.

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

**CERCLA Reportable Quantity**
This material does not contain any components with a CERCLA RQ.

**SARA304 Reportable Quantity**
This material does not contain any components with a section 304 EHS RQ.

**SARA 311/312 Hazards** : Acute Health Hazard
Chronic Health Hazard

| | | |
|---|---|---|
| **SARA 302** | : | SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302. |
| **SARA 313** | : | SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313. |

**Clean Air Act**

| | |
|---|---|
| **Ozone-Depletion Potential** | This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B). |

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 12 (40 CFR 61).
This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

| | |
|---|---|
| **California Prop 65** | WARNING! This product contains a chemical known in the State of California to cause cancer.<br>WARNING: This product contains a chemical known in the State of California to cause birth defects or other reproductive harm. |

## 16. Other information

**HMIS Classification**

| | | |
|---|---|---|
| **Health** | * | 3 |
| **Flammability** | | 0 |
| **Physical Hazard** | | 0 |
| **Personal Protection** | | X |

**Caution:** HMIS® rating is based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® rating is not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® rating is to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). Please note HMIS® attempts to convey full health warning information to all employees.

**Notes to Reader**

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Revision Date 09/22/2014

Material number: 91514

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EMAIL GLOSSARY

## SECTION 1: CHEMICAL PRODUCT and COMPANY IDENTIFICATION

| | |
|---|---|
| Product Name: | **C-21 ALL ACRYLIC** |
| Manufacturer Name: | Silpro Corporation |
| Address: | 2 New England Way<br>Ayer, MA 01432-1514 |
| Email: | MSDS@Silpro.com |
| Business Phone: | 978-772-4444 |
| Business Fax: | 978-772-7456 |
| Emergency Phone: | 800-535-5053 |
| For information in North America, call: | 978-772-4444 |
| **CHEMTREC Numbers:** | |
| Manufacturer MSDS Revision Date: | 11/08/2004 |

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## SECTION 2 : COMPOSITION, INFORMATION ON INGREDIENTS

| Chemical Name | CAS# | Lower Percent | Upper Percent |
|---|---|---|---|
| Non-hazardous ingredients | | 60 | 100 |
| Acrylic polymer(s) | No data | 10 | 30 |

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## SECTION 3 : HAZARDS IDENTIFICATION

Emergency Overview: Irritant

**Applies to All Ingredients:**

| | |
|---|---|
| Route of Exposure: | Eyes. Skin. Inhalation. Ingestion |
| Potential Health Effects: | |
| Eye Contact: | May cause irritation. |
| Skin Contact: | May cause irritation. |
| Inhalation: | Prolonged or excessive inhalation may cause respiratory tract irritation. |
| Ingestion: | Harmful if swallowed. Ingestion can cause nausea, vomiting, diarrhea and gastrointestinal irritation. |
| Target Organs: | Eyes. Skin. Respiratory system. Digestive system. |
| Signs/Symptoms: | Overexposure can cause irritation. |
| Aggravation of Pre-Existing Conditions: | May aggravate pre-existing respiratory disorders, allergy, eczema, or skin conditions. |

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## SECTION 4 : FIRST AID MEASURES

| | |
|---|---|
| Eye Contact: | Immediately flush eyes with plenty of water for 15 to 20 minutes. Get medical attention, if irritation or symptoms of overexposure persists. |
| Skin Contact: | Immediately wash skin with soap and plenty of water. Get medical attention if irritation develops or persists. |
| Inhalation: | If inhaled, remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Seek immediate medical attention. |

| | |
|---|---|
| Ingestion: | If swallowed, do NOT induce vomiting. Call a physician or poison control center immediately. Never give anything by mouth to an unconscious person. |

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## SECTION 5 : FIRE FIGHTING MEASURES

| | |
|---|---|
| Flash Point: | No Data |
| Extinguishing Media: | In the event of a fire involving this material, alone or in combination with other materials, use dry powder or carbon dioxide extinguishers. Do not use water. |
| Protective Equipment: | As in any fire, wear self-contained breathing apparatus pressure-demand, NIOSH (approved or equivalent) and full protective gear. |

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## SECTION 6 : ACCIDENTAL RELEASE MEASURES

| | |
|---|---|
| Personal Precautions: | Use proper personal protective equipment as listed in section 8. |
| Spill Cleanup Measures: | Absorb spill with dry inert material such as dry sand, earth, or vermiculite, then place in suitable container. |
| Environmental Precautions: | Avoid runoff into storm sewers, ditches, and waterways. |

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## SECTION 7 : HANDLING and STORAGE

| | |
|---|---|
| Handling: | Use with adequate ventilation. Avoid breathing dust or vapor and contact with eyes. Avoid prolonged or repeated contact with skin. |
| Storage: | Store in a cool, dry, well ventilated area away from sources of heat, combustible materials, and incompatible substances. Keep container tightly closed when not in use. |
| Hygiene Practices: | Wash thoroughly after handling. Avoid contact with eyes and skin. Avoid inhaling dust, vapor or mist. |
| Special Handling Procedures: | Material is alkaline when mixed with water. Use precaution and proper protective equipment |

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## SECTION 8 : EXPOSURE CONTROLS, PERSONAL PROTECTION

| | |
|---|---|
| Engineering Controls: | Use appropriate engineering control such as process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Good general ventilation should be sufficient to control airborne levels. Where such systems are not effective wear suitable personal protective equipment, which performs satisfactorily and meets OSHA or other recognized standards. Consult with local procedures for selection, training, inspection and maintenance of the personal protective equipment. |
| Skin Protection Description: | Chemical-resistant gloves and chemical goggles, face-shield and synthetic apron or coveralls should be used to prevent contact with eyes, skin or clothing. |
| Hand Protection Description: | Wear appropriate protective gloves. Consult glove manufacturer's data for permeability data. |
| Eye/Face Protection: | Wear appropriate protective glasses or splash goggles as described by 29 CFR 1910.133, OSHA eye and face protection regulation, or the European standard EN 166. |
| Respiratory Protection: | A NIOSH approved air-purifying respirator with a combination cartridge or canister for dust and organic vapors may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air purifying respirators is limited. Use a positive pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection. |
| Other Protective: | Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. |

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## SECTION 9 : PHYSICAL and CHEMICAL PROPERTIES

| | |
|---|---|
| Physical State/Appearance: | Liquid |
| Color: | Milky white |
| Odor: | Slight odor |
| pH: | 9-10 |
| Vapor Pressure: | 17 mmHg 20 deg C/68 deg F |
| Vapor Density: | No data |
| Flash Point: | No Data |
| Boiling Point: | 212 °F (100 °C) |
| Melting Point: | Not Applicable |
| Solubility: | Can be diluted in water |
| Specific Gravity: | 1-1.2 (Ref: Water = 1) |
| Density: | No data. |
| Molecular Formula: | Mixture |
| Molecular Weight: | Mixture |

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## SECTION 10 : STABILITY and REACTIVITY

| | |
|---|---|
| Chemical Stability: | Stable under normal temperatures and pressures. |
| Incompatibilities with Other Materials: | Strong oxidizing agents. Strong acids. |
| Hazardous Decomposition Products: | None |

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## SECTION 11 : TOXICOLOGICAL INFORMATION

**Acrylic polymer(s) :**

| | |
|---|---|
| Eye Effect: | No data. |
| Skin Effects: | No data. |
| Ingestion Effects: | No data. |
| Inhalation Effects: | No data. |

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## SECTION 12 : ECOLOGICAL INFORMATION

| | |
|---|---|
| Ecotoxicity: | No product ecological data. |
| Environmental Fate: | No product ecological data. |

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## SECTION 13 : DISPOSAL CONSIDERATIONS

| | |
|---|---|
| Waste Disposal: | Consult with the US EPA Guidelines listed in 40 CFR Part 261.3 for the classifications of hazardous waste prior to disposal. Furthermore, consult with your state and local waste requirements or guidelines, if applicable, to ensure compliance. Arrange disposal in accordance to the EPA and/or state and local guidelines. |
| Ignitable (Yes/No): | No |

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## SECTION 14 : TRANSPORT INFORMATION

| | |
|---|---|
| DOT Hazard Class: | Not regulated |
| DOT Identification Number: | Not regulated |

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## SECTION 15 : REGULATORY INFORMATION

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## SECTION 16 : ADDITIONAL INFORMATION

| | |
|---|---|
| MSDS Preparation Date: | 11/08/2004 |
| MSDS Revision Date: | 11/08/2004 |
| MSDS Author: | "Actio Corporation" |

Disclaimer:

This Health and Safety Information is correct to the best of our knowledge and belief at the date of its publication but we cannot accept liability for any loss, injury or damage which may result from its use. We shall ensure, so far as is reasonably practicable, that any revision of this Data Sheet is sent to all customers to whom we have directly supplied this substance, but must point out that it is the responsibility of any intermediate supplier to ensure that such revision is passed to the ultimate user. The information given in the Data Sheet is designed only as a guidance for safe handling, storage and the use of the substance. It is not a specification nor does it guarantee any specific properties. All chemicals should be handled only by competent personnel, within a controlled environment. Should further information be required, this can be obtained through the sales office whose address is at the top of this data sheet. We welcome any additional information about our products that customers have obtained by personal experience.

References:

1. American Chemical Society, STN Easy Online Database
2. Brethericks Reactive Chemical Hazards Database. Version 2.
3. Gassarett and Doulls Toxicology, The Basic Science of Poisons.
4. Hawleys Condensed Chemical Dictionary, Thirteenth Edition
5. IARC monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Man, WHO International Research on Cancer.
6. Industrial Hygiene and Toxicology, by F.A. Patty.
7. National Library of Medicine, Department of Health and Human Services, Hazardous Substances Data Bank (HSDB).
8. National Toxicology Program (NTP) Eighth Report on Carcinogens, 1997.
9. NIOSH Registry of Toxic Effects of Chemical Substances (RTECS) and Pocket Guide to Chemical Hazards.
10. OSHA Hazard Communication Standard, 1910.1200 and Z Tables.
11. Sax Dangerous Properties of Industrial Materials. Tenth Edition.
12. The Merck Index: An Encyclopedia of Chemicals and Drugs. Merck and Company. Twelfth Edition 1998.
13. Threshold Limit Values for Chemical Substances and Physical Agents in the Work Environmental and Biological Exposure Indices. TLV Booklet, 2001.

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EMAIL GLOSSARY

## SECTION 1: CHEMICAL PRODUCT and COMPANY IDENTIFICATION

| | |
|---|---|
| Product Name: | **CONCRETE FINISH WHITE** |
| Manufacturer Name: | Silpro Corporation |
| Address: | 2 New England Way<br>Ayer, MA 01432-1514 |
| Email: | MSDS@Silpro.com |
| Business Phone: | 978-772-4444 |
| Business Fax: | 978-772-7456 |
| Emergency Phone: | 800-535-5053 |
| For information in North America, call: | 978-772-4444 |
| **CHEMTREC Numbers:** | |
| Manufacturer MSDS Revision Date: | 11/08/2004 |

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## SECTION 2 : COMPOSITION, INFORMATION ON INGREDIENTS

| Chemical Name | CAS# | Lower Percent | Upper Percent |
|---|---|---|---|
| Crystalline Silica (quartz) | 14808-60-7 | 0.1 | 1 |
| Calcium Magnesium Carbonate | 16389-88-1 | 30 | 60 |
| Hydrated Lime | 39445-23-3 | 10 | 30 |
| Portland Cement | 65997-15-1 | 10 | 30 |
| Anhydrous Calcium Sulfate | 7778-18-9 | 0.1 | 1 |
| Nuisance dust | No data | 5 | 10 |

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## SECTION 3 : HAZARDS IDENTIFICATION

Emergency Overview: Irritant

**Applies to All Ingredients:**

| | |
|---|---|
| Route of Exposure: | Eyes. Skin. Inhalation. Ingestion |
| Potential Health Effects: | |
| Eye Contact: | May cause irritation, burns and permanent tissue damage. |
| Skin Contact: | May cause irritation, dry skin, redness, discomfort or burns. |
| Inhalation: | Prolonged or repeated inhalation may cause lung damage. |
| Ingestion: | May cause irritation. Ingesting large amounts may cause injury. |
| Chronic Health Effects: | Respirable crystalline silica (quartz) can cause silicosis, a fibrosis (scarring) of the lungs, increased risk of tuberculosis, increased incidence of chronic kidney disease and end-stage renal disease, scleroderma and other connective tissue disorders. Silicosis may be progressive; it may lead to disability and death. |
| Chronic Skin Contact: | Prolonged or repeated contact can result in defatting and drying of the skin, which may result in skin irritation and dermatitis (rash). |
| Target Organs: | Eyes. Skin. Respiratory system. Digestive system. |
| Signs/Symptoms: | Product is alkali when wet, excessive and prolonged exposure can cause severe irritation, burns and permanent tissue damage |
| Aggravation of Pre-Existing Conditions: | May aggravate pre-existing respiratory disorders, allergy, eczema, or skin conditions. |

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## SECTION 4 : FIRST AID MEASURES

| | |
|---|---|
| Eye Contact: | Immediately flush eyes with plenty of water for 15 to 20 minutes. Get medical attention, if irritation or symptoms of overexposure persists. |
| Skin Contact: | Immediately wash skin with soap and plenty of water. Get medical attention if irritation develops or persists. |
| Inhalation: | If inhaled, remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Seek immediate medical attention. |
| Ingestion: | If swallowed, do NOT induce vomiting. Call a physician or poison control center immediately. Never give anything by mouth to an unconscious person. |

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## SECTION 5 : FIRE FIGHTING MEASURES

| | |
|---|---|
| Fire: | Not Combustible |
| Flash Point: | No Data |
| Extinguishing Media: | In the event of a fire involving this material, alone or in combination with other materials, use dry powder or carbon dioxide extinguishers. Do not use water. |
| Protective Equipment: | As in any fire, wear self-contained breathing apparatus pressure-demand, NIOSH (approved or equivalent) and full protective gear. |

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## SECTION 6 : ACCIDENTAL RELEASE MEASURES

| | |
|---|---|
| Personal Precautions: | Use proper personal protective equipment as listed in section 8. |
| Spill Cleanup Measures: | Vacuum or sweep up material and place in a disposal container. |
| Environmental Precautions: | Avoid runoff into storm sewers, ditches, and waterways. |

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## SECTION 7 : HANDLING and STORAGE

| | |
|---|---|
| Handling: | Use with adequate ventilation. Avoid breathing dust or vapor and contact with eyes. Avoid prolonged or repeated contact with skin. |
| Storage: | Store in a cool, dry, well ventilated area away from sources of heat, combustible materials, and incompatible substances. Keep container tightly closed when not in use. |
| Hygiene Practices: | Wash thoroughly after handling. Avoid contact with eyes and skin. Avoid inhaling dust, vapor or mist. |
| Special Handling Procedures: | Material is alkaline when mixed with water. Use precaution and proper protective equipment |

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## SECTION 8 : EXPOSURE CONTROLS, PERSONAL PROTECTION

| | |
|---|---|
| Engineering Controls: | Use appropriate engineering control such as process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Good general ventilation should be sufficient to control airborne levels. Where such systems are not effective wear suitable personal protective equipment, which performs satisfactorily and meets OSHA or other recognized standards. Consult with local procedures for selection, training, inspection and maintenance of the personal protective equipment. |
| Skin Protection Description: | Chemical-resistant gloves and chemical goggles, face-shield and synthetic apron or coveralls should be used to prevent contact with eyes, skin or clothing. |
| Hand Protection Description: | Wear appropriate protective gloves. Consult glove manufacturer's data for permeability data. |
| Eye/Face Protection: | Wear appropriate protective glasses or splash goggles as described by 29 CFR 1910.133, OSHA eye and face protection regulation, or the European standard EN 166. |
| Respiratory Protection: | A NIOSH approved air-purifying respirator with a combination cartridge or canister |

| | |
|---|---|
| | for dust and organic vapors may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air purifying respirators is limited. Use a positive pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection. |
| Other Protective: | Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. |

**Ingredient Guidelines**

Ingredient: Anhydrous Calcium Sulfate

| | |
|---|---|
| Guideline Type: | ACGIH TLV-TWA |
| Guideline Information: | 10 mg/m3 (E) |
| Guideline Type: | "OSHA PEL-TWA" |
| Guideline Information: | 5 mg/m3 Respirable |

Ingredient: Crystalline Silica (quartz)

| | |
|---|---|
| Guideline Type: | ACGIH TLV-TWA |
| Guideline Information: | 0.05 mg/m3 (R) |

Ingredient: Portland Cement

| | |
|---|---|
| Guideline Type: | ACGIH TLV-TWA |
| Guideline Information: | 10 mg/m3 (E) |
| Guideline Type: | "OSHA PEL-TWA" |
| Guideline Information: | 5 mg/m3 Respirable |

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## SECTION 9 : PHYSICAL and CHEMICAL PROPERTIES

| | |
|---|---|
| Physical State/Appearance: | solid or powder |
| Color: | White |
| Odor: | No odor |
| pH: | No data |
| Vapor Pressure: | None |
| Vapor Density: | No data |
| Flash Point: | No Data |
| Boiling Point: | > 1832 °F (>1000 °C) |
| Melting Point: | 3110 °F (1710 °C) |
| Solubility: | Slight, 0.1 to 1.0% in water |
| Density: | No data. |
| Molecular Formula: | Mixture |
| Molecular Weight: | Mixture |

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## SECTION 10 : STABILITY and REACTIVITY

| | |
|---|---|
| Chemical Stability: | Stable under normal temperatures and pressures. |
| Incompatibilities with Other Materials: | Strong oxidizing agents. Strong acids. |
| Hazardous Decomposition Products: | None |

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## SECTION 11 : TOXICOLOGICAL INFORMATION

**Crystalline Silica (quartz) :**

| | |
|---|---|
| Eye Effect: | No data. |
| Skin Effects: | No data. |
| Ingestion Effects: | Oral - rat TDLo: 120 gm/kg; Gastrointestinal - hypermotility, diarrhea Gastrointestinal - other changes |
| Inhalation Effects: | Inhalation - rat TCLo: 200 mg/kg; Lungs, Thorax, or Respiration - fibrosis, focal (pneumoconiosis) Lungs, Thorax, or Respiration - other changes Nutritional and Gross Metabolic - changes in iron |
| Carcinogenicity: | IARC: Group 1: Carcinogenic to humans.<br>NTP: Reasonably anticipated to be a human carcinogen |

**Portland Cement :**

| | |
|---|---|
| Eye Effect: | No data. |
| Skin Effects: | No data. |
| Ingestion Effects: | No data. |
| Inhalation Effects: | No data. |

**Anhydrous Calcium Sulfate :**

| | |
|---|---|
| Eye Effect: | No data. |
| Skin Effects: | No data. |
| Ingestion Effects: | No data. |
| Inhalation Effects: | No data. |

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## SECTION 12 : ECOLOGICAL INFORMATION

| | |
|---|---|
| Ecotoxicity: | No product ecological data. |
| Environmental Fate: | No product ecological data. |

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## SECTION 13 : DISPOSAL CONSIDERATIONS

| | |
|---|---|
| Waste Disposal: | Consult with the US EPA Guidelines listed in 40 CFR Part 261.3 for the classifications of hazardous waste prior to disposal. Furthermore, consult with your state and local waste requirements or guidelines, if applicable, to ensure compliance. Arrange disposal in accordance to the EPA and/or state and local guidelines. |
| Ignitable (Yes/No): | No |

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## SECTION 14 : TRANSPORT INFORMATION

| | |
|---|---|
| DOT Hazard Class: | Not regulated |
| DOT Identification Number: | Not regulated |

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## SECTION 15 : REGULATORY INFORMATION

**Crystalline Silica (quartz) :**

| | |
|---|---|
| TSCA 8(b): Inventory Status: | Listed. |
| Canada DSL: | Listed |

**Calcium Magnesium Carbonate :**

| | |
|---|---|
| TSCA 8(b): Inventory Status: | Listed. |
| Canada DSL: | Listed |

**Hydrated Lime :**

| | |
|---|---|
| TSCA 8(b): Inventory Status: | Listed. |
| Canada DSL: | Listed |

**Portland Cement :**

| | |
|---|---|
| TSCA 8(b): Inventory Status: | Listed. |

| | |
|---|---|
| Canada DSL: | Listed |

**Anhydrous Calcium Sulfate :**

| | |
|---|---|
| TSCA 8(b): Inventory Status: | Listed. |
| Canada DSL: | Listed |

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## SECTION 16 : ADDITIONAL INFORMATION

| | |
|---|---|
| MSDS Preparation Date: | 11/08/2004 |
| MSDS Revision Date: | 11/08/2004 |
| MSDS Author: | "Actio Corporation" |

Disclaimer:

This Health and Safety Information is correct to the best of our knowledge and belief at the date of its publication but we cannot accept liability for any loss, injury or damage which may result from its use. We shall ensure, so far as is reasonably practicable, that any revision of this Data Sheet is sent to all customers to whom we have directly supplied this substance, but must point out that it is the responsibility of any intermediate supplier to ensure that such revision is passed to the ultimate user. The information given in the Data Sheet is designed only as a guidance for safe handling, storage and the use of the substance. It is not a specification nor does it guarantee any specific properties. All chemicals should be handled only by competent personnel, within a controlled environment. Should further information be required, this can be obtained through the sales office whose address is at the top of this data sheet. We welcome any additional information about our products that customers have obtained by personal experience.

References:

1. American Chemical Society, STN Easy Online Database
2. Brethericks Reactive Chemical Hazards Database. Version 2.
3. Gassarett and Doulls Toxicology, The Basic Science of Poisons.
4. Hawleys Condensed Chemical Dictionary, Thirteenth Edition
5. IARC monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Man, WHO International Research on Cancer.
6. Industrial Hygiene and Toxicology, by F.A. Patty.
7. National Library of Medicine, Department of Health and Human Services, Hazardous Substances Data Bank (HSDB).
8. National Toxicology Program (NTP) Eighth Report on Carcinogens, 1997.
9. NIOSH Registry of Toxic Effects of Chemical Substances (RTECS) and Pocket Guide to Chemical Hazards.
10. OSHA Hazard Communication Standard, 1910.1200 and Z Tables.
11. Sax Dangerous Properties of Industrial Materials. Tenth Edition.
12. The Merck Index: An Encyclopedia of Chemicals and Drugs. Merck and Company. Twelfth Edition 1998.
13. Threshold Limit Values for Chemical Substances and Physical Agents in the Work Environmental and Biological Exposure Indices. TLV Booklet, 2001.

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## I. PRODUCT AND COMPANY IDENTIFICATION

| | |
|---|---|
| **Company:** | Simpson Strong-Tie Company, Inc. |
| **Address:** | 5956 W. Las Positas Blvd.<br>Pleasanton, CA 94588 |
| **Product Name:** | **ATPAC05, ATPAC05KT, AT08, AT10, AT13, AT30, AT050R, BONDMAX10 - AT Resin** |
| **Product Description:** | Acrylic-Tie Adhesive - Resin |
| **Emergency Contact No.:** | 1-800-535-5053 **USA**<br>1-352-323-3500 **International** |
| **Date Prepared or Revised:** | July 2008 |
| **Supercedes:** | March 2008 |
| | For most current MSDS, please visit our web site at www.simpsonanchors.com. |

## II. COMPOSITION / INFORMATION ON INGREDIENTS

| Chemical Names | CAS Numbers |
|---|---|
| Methyl Methacrylate | 80-62-6 |
| Crystalline Silica | 14808-60-7 |

The remaining ingredients are designated as "trade secret".

## III. HAZARD IDENTIFICATION

### EMERGENCY OVERVIEW

Non-corrosive.
Flammable.
May cause eye and skin irritation.
May cause skin sensitization

### POTENTIAL HEALTH EFFECTS

#### ACUTE

| | |
|---|---|
| **Eye Contact:** | May cause eye irritation, swelling, tearing, redness or cornea damage. |
| **Skin Contact:** | Moderate irritation. May cause skin sensitization, evidenced by rashes and hives. |
| **Inhalation:** | Moderate irritation to the nose and respiratory tract. May cause Central Nervous System depression, evidenced by headache, dizziness, and nausea. |
| **Ingestion:** | May cause irritation to the gastrointestinal tract. May cause Central Nervous System depression or other systemic effects. |
| **Systemic Effects:** | Lungs, eyes, and skin. |

## IV. FIRST AID MEASURES

| | |
|---|---|
| **Eye Contact:** | Immediately flush eyes with plenty of cool water for at least 15 minutes while holding the eyes open. If redness, burning, blurred vision, or swelling persists, **CONSULT A PHYSICIAN**. |
| **Skin Contact:** | Remove product and immediately wash affected area with soap and water. Do not apply greases or ointments. Remove contaminated clothing. Wash clothing with soap and water before reuse. If redness, burning, or swelling persists, **CONSULT A PHYSICIAN**. |
| **Ingestion:** | **DO NOT INDUCE VOMITING**. Never administer anything by mouth to an unconscious person. Rinse out mouth with water, then drink sips of water to remove taste from mouth. **CONSULT A PHYSICIAN** if vomiting occurs spontaneously, keep head below hips to prevent aspiration. |
| **Inhalation:** | Remove patient to fresh air. If patient continues to experience difficulty breathing, **CONSULT A PHYSICIAN**. |

## V. FIRE-FIGHTING MEASURES

| | |
|---|---|
| **Suitable Extinguishing Media:** | Water fog, carbon dioxide or dry chemical, aqueous foam. |
| **Fire And Explosion Hazard:** | Hazardous gases/vapors produced are methyl methacrylate, carbon monoxide, carbon dioxide, and smoke. Toxic and flammable vapors may be produced under combustion. Sealed containers exposed to elevated temperatures may rupture explosively due to |

| | |
|---|---|
| | polymerization. Vapors are heavier than air and may travel to ignition sources and flash back. Do not allow run-off from fire fighting to enter drains or water courses. |
| **Fire Fighting Equipment and Procedures:** | Wear full protective clothing and self-contained breathing apparatus for fire fighting. Isolate fuel supply from fire. Clear fire area of all non-emergency personnel. Use water spray to cool fire-exposed surfaces and containers. |

## VI. ACCIDENTAL RELEASE MEASURES

| | |
|---|---|
| **Personal Precautions:** | Use cautious judgment when cleaning up spill. Shut off leaks, if possible without personal risk. Wear suitable protective clothing, gloves and eye/face protection. Evacuate personnel to safe areas. |
| **Environmental Precautions:** | Construct a dike to prevent spreading. Keep out of sewers, storm drains, surface waters, and soils. |
| **Clean-up Methods:** | **Small spills**: Soak up with absorbent material such as clay, sand or other suitable non-reactive material. Place in leak-proof containers. Seal tightly for proper disposal. **Large spills**: Approach suspected leak areas with caution. Create a dike or trench to contain material. Soak up with absorbent material such as clay, sand or other suitable non-reactive material. Place in leak-proof containers. Seal tightly for proper disposal. |
| **Additional Information:** | Notify authorities if any exposures to the general public or environment occur or are likely to occur. Dispose in accordance with federal, state, and local regulations. |

## VII. STORAGE AND HANDLING

| | |
|---|---|
| **Storage:** | Keep away from: acids, oxidizers, heat, or flames. Keep in cool, dry, well-ventilated area in closed containers. Protect containers from physical damage. |
| **Handling (Personnel):** | To prevent skin and eyes contact under the foreseeable conditions of use, wear appropriate protective clothing and safety eyewear. When handling, do not eat, drink, or smoke. Wash thoroughly after handling. Avoid breathing fumes. Handle in a well-ventilated work area. |
| **Handling (Physical Aspects):** | Close container after each use. Ground drum and bond to container to prevent static spark. Keep away from heat, sparks and flames. |

## VIII. EXPOSURE CONTROLS / PERSONAL PROTECTION

| | |
|---|---|
| **Protective Measure:** | Wear appropriate personal protective equipment. |
| **Eye Protection:** | Avoid contact with eyes. Wear chemical splash goggles or safety glasses with side shield. |
| **Hand Protection:** | Wear chemical-resistant gloves such as: Nitrile, neoprene, butyl. |
| **Skin and Body Protection:** | Wear chemical-resistant gloves and other clothing as required to minimizing contact. |
| **Respirator Protection:** | Not required for properly ventilated areas. |
| **Exposure Limits:** | |

| Chemical Names | ACGIH (TLV) | OSHA (PEL) |
|---|---|---|
| Methyl Methacrylate | 50 ppm | 100 ppm |
| Silica, crystalline quartz (airborne particulates of respirable size) | 0.1mg/$m^3$ | 0.4mg/$m^3$ |

## IX. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| **Form:** | Paste |
| **Color:** | White |
| **Odor:** | Strong acrid odor |
| **Vapor Pressure:** | N/E |
| **Boiling Point:** | N/E |
| **Freezing Point:** | N/E |
| **Flash Point:** | 73°F (23°C) Closed Cup |

| | |
|---|---|
| **Specific Gravity:** | N/E |
| **pH:** | 6.7 |
| **Solubility In Water:** | N/E |

## X. REACTIVITY DATA

| | |
|---|---|
| **Stability:** | Unstable with heat. |
| **Conditions To Avoid:** | Incompatible chemicals, heat and open flame. |
| **Materials To Avoid:** | Oxidizing and reducing agents |
| **Hazardous Decomposition Products:** | Decomposes with heat. Combustion may produce carbon monoxide, carbon dioxide, aldehydes and smoke. |
| **Hazardous Polymerization:** | Polymerization can occur when exposed to excessive heat. |

## XI. TOXICOLOGICAL PROPERTIES

| | |
|---|---|
| **Acute Oral ($LD_{50}$, Rat):** | Non toxic |
| **Acute Dermal ($LD_{50}$, Rabbit):** | N/E |
| **Acute Inhalation ($LC_{50}$, Rat):** | N/E |
| **Chronic Health Hazard** | Prolonged and/or repeated exposure to methyl methacrylate may lead to kidney, lung, liver, and heart damage. Respirable crystalline silica (quartz) can cause silicosis (scarring) of the lungs. Exposure to silica dust is not likely from normal use of product. |

## XII. DISPOSAL CONSIDERATIONS

| | |
|---|---|
| **Waste From Residues / Unused Products:** | This material is a hazardous waste by RCRA criteria (40 CFR 261). Dispose of container and unused contents in accordance with federal, state, and local requirements. |

## XIII. TRANSPORTATION

| | |
|---|---|
| **US DOT (CFR):** | UN1866, Resin Solution, 3, PG III. |
| **IATA:** | UN1866, Resin Solution, 3, PG III, Pkg Inst. 309. |
| **IMO:** | UN1866, Resin Solution, 3, PG III, (23°C). |

## XIV. REGULATORY INFORMATION

| Country | Regulatory List |
|---|---|
| USA | TSCA |

**EPA SARA Title III Section 312 (40 CFR 370) Hazardous Classification:**
Acute/Chronic Health Hazard.
**EPA SARA Title III Section 313 (40 CFR 372) Component(s) above 'de minimus' level:**
Methyl Methacrylate.
**US. California "Safe Drinking Water and Toxic Enforcement Act" (Proposition 65):**
This product contains small traces of the following chemicals that are known to the State of California to cause cancer and/or reproductive toxicity and other harm.

| Component | Regulation | % In Blend (approx.) | Remarks |
|---|---|---|---|
| Silica Quartz | ACGIH | <43 | Carcinogenic |

## XV. OTHER INFORMATION

**HMIS RATING**

| Health | Flammability | Physical Hazard |
|---|---|---|
| 2 | 3 | 0 |

N/E – Not Established

This Material Safety Data Sheet (MSDS) is prepared by Simpson Strong-Tie Co. in compliance with the requirements of OSHA 29 CFR Part 1910.1200. The information it contains is offered in good faith as accurate as of the date of this MSDS. This MSDS is provided solely for the purpose of conveying health, safety, and environmental information. No warranty, expressed or implied, is given. Health and Safety precautions may not be adequate for all individuals and/or situations. It is the user's obligation to evaluate and use this product safely and to comply with all applicable laws and regulations.

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## I. PRODUCT AND COMPANY IDENTIFICATION

| | |
|---|---|
| **Company:** | Simpson Strong-Tie Company, Inc. |
| **Address:** | 5956 W. Las Positas Blvd.<br>Pleasanton, CA 94588 |
| **Product Name:** | **ATPAC05, ATPAC05KT, AT08, AT10, AT13, AT30, AT005I, BONDMAX10 – AT Initiator** |
| **Product Description:** | Acrylic-Tie Adhesive - AT Initiator |
| **Emergency Contact No.:** | 1-800-535-5053 **USA**<br>1-352-323-3500 **International** |
| **Date Prepared or Revised:** | July 2008 |
| **Supercedes:** | March 2008 |
| | For most current MSDS, please visit our web site at www.simpsonanchors.com. |

## II. COMPOSITION / INFORMATION ON INGREDIENTS

| Chemical Names | CAS Numbers |
|---|---|
| Dibenzoyl peroxide | 94-36-0 |
| Diisobutyl phthalate | 84-69-5 |
| Crystalline Silica | 14808-60-7 |

The remaining ingredients are designated as "trade secret".

## III. HAZARD IDENTIFICATION

### EMERGENCY OVERVIEW

Non corrosive.
Moderate irritation to eyes and skin.
May cause skin sensitization.

### POTENTIAL HEALTH EFFECTS

#### ACUTE

| | |
|---|---|
| **Eye Contact:** | May cause eye irritation, swelling, tearing, redness or cornea damage. |
| **Skin Contact:** | Moderate irritation. May cause skin sensitization, evidenced by rashes and hives. |
| **Inhalation:** | Moderate irritation to the nose and respiratory tract. May cause Central Nervous System depression, evidenced by headache, dizziness, and nausea. |
| **Ingestion:** | May cause irritation to the gastrointestinal tract. May cause Central Nervous System depression or other systemic effects. |
| **Systemic Effects:** | Lungs, eyes, and skin. |

## IV. FIRST AID MEASURES

| | |
|---|---|
| **Eye Contact:** | Immediately flush eyes with plenty of cool water for at least 15 minutes while holding the eyes open. If redness, burning, blurred vision, or swelling persists, **CONSULT A PHYSICIAN**. |
| **Skin Contact:** | Remove product and immediately wash affected area with soap and water. Do not apply greases or ointments. Remove contaminated clothing. Wash clothing with soap and water before reuse. If redness, burning, or swelling persists, **CONSULT A PHYSICIAN**. |
| **Ingestion:** | **DO NOT INDUCE VOMITING**. Never administer anything by mouth to an unconscious person. Rinse out mouth with water, then drink sips of water to remove taste from mouth. **CONSULT A PHYSICIAN** if vomiting occurs spontaneously, keep head below hips to prevent aspiration. |
| **Inhalation:** | Remove patient to fresh air. If patient continues to experience difficulty breathing, **CONSULT A PHYSICIAN**. |

## V. FIRE-FIGHTING MEASURES

| | |
|---|---|
| **Suitable Extinguishing Media:** | Water spray, fog or foam, carbon dioxide, dry chemical. |
| **Fire And Explosion Hazard:** | Irritating and toxic fumes may be produced at high temperature. In a fire, may produce carbon monoxide, carbon dioxide, byphenyl, and smoke. Do not allow run-off from fire fighting to enter drains or water courses. |

## V. FIRE-FIGHTING MEASURES (CONT.)

**Fire Fighting Equipment and Procedures:** Wear full protective clothing and self-contained breathing apparatus for fire fighting. Isolate fuel supply from fire. Clear fire area of all non-emergency personnel. Use water spray to cool fire-exposed surfaces and containers.

## VI. ACCIDENTAL RELEASE MEASURES

**Personal Precautions:** Use cautious judgment when cleaning up spill. Shut off leaks, if possible without personal risk. Wear suitable protective clothing, gloves and eye/face protection. Evacuate personnel to safe areas.

**Environmental Precautions:** Construct a dike to prevent spreading. Keep out of sewers, storm drains, surface waters, and soils.

**Clean-up Methods:** **Small spills**: Soak up with absorbent material such as clay, sand or other suitable non-reactive material. Place in leak-proof containers. Seal tightly for proper disposal. **Large spills**: Approach suspected leak areas with caution. Create a dike or trench to contain material. Soak up with absorbent material such as clay, sand or other suitable non-reactive material. Place in leak-proof containers. Seal tightly for proper disposal.

**Additional Information:** Notify authorities if any exposures to the general public or environment occur or are likely to occur. Dispose in accordance with federal, state, and local regulations.

## VII. STORAGE AND HANDLING

**Storage:** Keep away from: acids, oxidizers, heat, or flames. Keep in cool, dry, well-ventilated area in closed containers. Protect containers from physical damage.

**Handling:** To prevent skin and eyes contact under the foreseeable conditions of use, wear appropriate protective clothing and safety eyewear. When handling, do not eat, drink, or smoke. Wash thoroughly after handling. Avoid breathing fumes. Handle in a well ventilated work area.

## VIII. EXPOSURE CONTROLS / PERSONAL PROTECTION

**Protective Measure:** Wear appropriate personal protective equipment.

**Eye Protection:** Avoid contact with eyes. Wear chemical splash goggles or safety glasses with side shield.

**Hand Protection:** Wear chemical-resistant gloves such as: Nitrile, neoprene, butyl.

**Skin and Body Protection:** Wear chemical-resistant gloves and other clothing as required to minimizing contact.

**Respirator Protection:** Not required for properly ventilated areas.

**Exposure Limits:**

| Chemical Names | ACGIH (TLV) | OSHA (PEL) |
|---|---|---|
| Dibenzoyl peroxide | 3 $mg/m^3$ | 100 ppm |
| Diisobutyl phthalate | N/E | N/E |
| Silica, crystalline quartz (airborne particulates of respirable size) | 0.1$mg/m^3$ | 0.4$mg/m^3$ |

## IX. PHYSICAL PROPERTIES

**Form:** Paste
**Color:** Black
**Odor:** No significant odor
**Boiling Point:** N/E
**Freezing Point:** N/E
**Vapor Pressure:** N/E
**Flash Point:** 203°F (95°C) Close cup
**Specific Gravity:** N/E
**pH:** 5.8
**Solubility In Water:** N/E

## X. REACTIVITY DATA

**Stability:** According to the manufacturer, this material is stable at temperature up to 113˚F (45˚C).
**Conditions To Avoid:** Incompatible chemicals and temperature above 113˚F (45˚C).
**Materials To Avoid:** Strong oxidizing agents, acids, and bases. Metal salt, reducing agents, and accelerators.
**Hazardous Decomposition Products:** Combustion may produce carbon monoxide, carbon dioxide, byphenyl, and smoke. Other organic substances and flammable vapors may be produced.
**Hazardous Polymerization:** Will not occur under normal temperature and pressure.

## XI. TOXICOLOGICAL PROPERTIES

**Acute Oral ($LD_{50}$, Rat):** N/E
**Acute Dermal ($LD_{50}$, Rabbit):** N/E
**Acute Inhalation ($LC_{50}$, Rat):** N/E
**Chronic Health Hazard** Systemic toxicity in humans has not been reported. Respirable crystalline silica (quartz) can cause silicosis (scarring) of the lungs. Exposure to silica dust is not likely from normal use of product. Components of this product are listed as carcinogens concentrations of 0.1% or greater. Repeated or prolonged exposure may cause allergic reaction and/or limited sensitization.

## XII. DISPOSAL CONSIDERATIONS

**Waste From Residues / Unused Products:** This material is a hazardous waste by RCRA criteria (40 CFR 261). Dispose of container and unused contents in accordance with federal, state, and local requirements.

## XIII. TRANSPORTATION

**US DOT(CFR):** UN3107, Organic Peroxide Type E, Liquid (Dibenzoyl Peroxide), 22%, 5.2.
**IATA:** UN3107, Organic Peroxide Type E, Liquid (Dibenzoyl Peroxide), 22%, 5.2, Pkg Inst. 500.
**IMO:** UN3107, Organic Peroxide Type E, Liquid (Dibenzoyl Peroxide), 22%, 5.2.

## XIV. REGULATORY INFORMATION

| Country | Regulatory List |
|---|---|
| USA | TSCA |

**EPA SARA Title III Section 312 (40 CFR 370) Hazardous Classification:**
Acute/Chronic Health Hazard.
**EPA SARA Title III Section 313 (40 CFR 372) Component(s) above 'de minimus' level:**
Dibenzoyl peroxide.
**US. California "Safe Drinking Water and Toxic Enforcement Act" (Proposition 65):**
This product contains small traces of the following chemicals that are known to the State of California to cause cancer and/or reproductive toxicity and other harm.

| Component | Regulation | % In Blend (approx.) | Remarks |
|---|---|---|---|
| Carbon Black | ACGIH | <0.1 | Carcinogenic |
| Silica Quartz | ACGIH | <41 | Carcinogenic |

## XV. OTHER INFORMATION

**HMIS RATING**

| Health | Flammability | Physical Hazard |
|---|---|---|
| 2 | 1 | 0 |

N/E – Not Established

This Material Safety Data Sheet (MSDS) is prepared by Simpson Strong-Tie Co. in compliance with the requirements of OSHA 29 CFR Part 1910.1200. The information it contains is offered in good faith as accurate as of the date of this MSDS. This MSDS is provided solely for the purpose of conveying health, safety, and environmental information. No warranty, expressed or implied, is given. Health and Safety precautions may not be adequate for all individuals and/or situations. It is the user's obligation to evaluate and use this product safely and to comply with all applicable laws and regulations.

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# SAFETY DATA SHEET
## Klean-Strip Green Odorless Mineral Spirits

Printed: 05/01/2015
Revision: 05/01/2015
Supersedes Revision: 04/20/2015

## 1. PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** Klean-Strip Green Odorless Mineral Spirits

**Company Name:** W. M. Barr
2105 Channel Avenue
Memphis, TN 38113

**Phone Number:** (901)775-0100

**Web site address:** www.wmbarr.com

**Emergency Contact:** 3E 24 Hour Emergency Contact (800)451-8346
**Information:** W.M. Barr Customer Service (800)398-3892

**Intended Use:** Paint, stain, and varnish thinning.

**Synonyms:** GKGO75000, QKGO75001, QKGO75001W

**Additional Information** This product is regulated by the United States Consumer Product Safety Commission and is subject to certain labeling requirements under the Federal Hazardous Substances Act. These requirements differ from the classification criteria and hazard information required for safety data sheets (SDS). The product label also includes other important information, including directions for use, and should always be read in its entirety prior to using the product.

## 2. HAZARDS IDENTIFICATION

**Acute Toxicity: Inhalation, Category 4**
**Skin Corrosion/Irritation, Category 2**
**Serious Eye Damage/Eye Irritation, Category 2B**
**Specific Target Organ Toxicity (single exposure), Category 3**



**GHS Signal Word:** **Warning**

**GHS Hazard Phrases:**
H315: Causes skin irritation.
H320: Causes eye irritation.
H332: Harmful if inhaled.
H336: May cause drowsiness or dizziness.

**GHS Precaution Phrases:**
P261: Avoid breathing 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.

**GHS Response Phrases:**
P302+352: IF ON SKIN: Wash with plenty of soap and water.
P304+340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305+351+338: 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 CENTER or doctor/physician if you feel unwell.
P321: Specific treatment see label.
P332+313: If skin irritation occurs, get medical advice/attention.
P337+313: If eye irritation persists, get medical advice/attention.
P362: Take off contaminated clothing and wash before re-use.

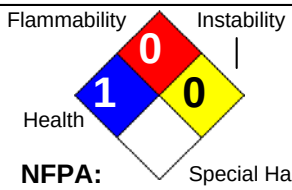
**GHS Storage and Disposal Phrases:**
P403+233: Store container tightly closed in well-ventilated place.
P405: Store locked up.
P501: Dispose of contents/container according to local, state and federal regulations.

**Hazard Rating System:**

**HMIS:**

| | |
|---|---|
| HEALTH | 1 |
| FLAMMABILITY | 0 |
| PHYSICAL | 0 |
| PPE | X |

**NFPA:**




**OSHA Regulatory Status:** This material is classified as hazardous under OSHA regulations.

**Potential Health Effects (Acute and Chronic):**

Eye contact : May cause eye irritation.

Inhalation : Harmful if inhaled. Can cause central nervous system (CNS) depression. May cause drowsiness and dizziness.

Ingestion : Can cause central nervous system (CNS) depression. Irritating to mouth, throat and stomach.

Skin contact : Causes skin irritation.

**Inhalation:** Adverse symptoms may include the following:
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness

**Skin Contact:** Adverse symptoms may include the following:
irritation
redness

**Eye Contact:** Adverse symptoms may include the following:
pain or irritation
watering
redness

**Ingestion:** Adverse symptoms may include the following:
nausea or vomiting

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

| CAS # | Hazardous Components (Chemical Name) | Concentration | RTECS # |
|---|---|---|---|
| 64742-47-8 | Hydrotreated light distillate (petroleum) | 15.0 -40.0 % | OA5504000 |

**Additional Chemical Information** Specific percentage of composition is being withheld as a trade secret.

## 4. FIRST AID MEASURES

**Emergency and First Aid Procedures:**

Inhalation:
If user experiences breathing difficulty, move to air free of vapors, Administer oxygen or artificial medical assistance can be rendered.

Skin Contact:
Wash with soap and large quantities of water and seek medical attention if irritation from contact persists.

Eye Contact:
Flush with large quantities of water for at least 15 minutes and seek immediate medical attention.

Ingestion:
Do not induce vomiting. If victim is drowsy or unconscious, place on the left side with head down. Never give anything by mouth to a person who is not fully conscious. Seek medical attention immediately. Call your local poison control center, hospital emergency room or physician immediately for further instructions.

**Note to Physician:** Call your local poison control center for further instructions.

## 5. FIRE FIGHTING MEASURES

**Flash Pt:** No data.

**Explosive Limits:** LEL: N.E. UEL: N.E.

**Autoignition Pt:** No data.

**Suitable Extinguishing Media:** Use carbon dioxide, dry powder, foam, or water spray.

**Unsuitable Extinguishing Media:** None known.

**Fire Fighting Instructions:** This material does not flash to boiling.

Self-contained respiratory protection should be provided for fire fighters fighting fires in buildings or confined areas. Storage containers exposed to fire should be kept cool with water spray to prevent pressure build-up.

**Flammable Properties and Hazards:** No flash to boiling. This material does not exhibit a flashpoint per the Setaflash Closed Cup test method.

## 6. ACCIDENTAL RELEASE MEASURES

**Steps To Be Taken In Case Material Is Released Or Spilled:**

Clean up:

Keep unnecessary people away; isolate hazard area and deny entry. Stay upwind, out of low areas, and ventilate closed spaces before entering.

Small spills:

Take up with sand, earth or other noncombustible absorbent material and place in a metal or plastic container where applicable.

Large spills:

Dike far ahead of spill for later disposal.

Waste Disposal:

Dispose in accordance with applicable local, state and federal regulations.

## 7. HANDLING AND STORAGE

**Precautions To Be Taken in Handling:** Read carefully all cautions and directions on product label before use. Since empty container retains residue, follow all label warnings even after container is empty. Dispose of empty container according to all regulations. Do not reuse this container.

**Precautions To Be Taken in Storing:** When stored for an extended period of time, the product may separate into two layers with the hazardous ingredient(s) on the top layer. Before use, mix the product by making sure the container is tightly closed and gently shaking the container to agitate the two layers back into solution.

Protect from freezing.
Keep container tightly closed when not in use.
Store in a cool, dry place.
Do not store near flames or at elevated temperatures.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

| CAS # | Partial Chemical Name | OSHA TWA | ACGIH TWA | Other Limits |
|---|---|---|---|---|
| 64742-47-8 | Hydrotreated light distillate (petroleum) | PEL: 200 ppm<br>STEL: 500 ppm/(10min)<br>CEIL: 300 ppm | TLV: 200 mg/m3 | No data. |

**Respiratory Equipment (Specify Type):** For OSHA controlled work place and other regular users. Use only with adequate ventilation under engineered air control systems designed to prevent exceeding appropriate TLV. For occasional use, where engineered air control is not feasible, use properly maintained and properly fitted NIOSH approved respirator for organic solvent vapors. A dust mask does not provide protection against vapors.

**Eye Protection:** Safety glasses, goggles or face shields are recommended to safeguard against potential eye contact, irritation, or injury. Contact lenses should not be worn while working with chemicals.

**Protective Gloves:** For OSHA controlled work place and other regular users, wear impermeable gloves to prevent skin contact. Gloves contaminated with product should be discarded.

For occasional use, wear impermeable gloves to prevent extended or repeated contact with the skin.

**Other Protective Clothing:** Various application methods can dictate use of additional protective safety equipment, such as impermeable aprons, etc., to minimize exposure.

**Engineering Controls (Ventilation etc.):** Use only with adequate ventilation to prevent build-up of vapors. Open windows and doors if needed to provide fresh air. If strong odor is noticed or you experience slight dizziness, headache, nausea, or eye-watering - Stop - ventilation is inadequate. Leave area immediately.

**Work/Hygienic/Maintenance Practices:** Wash hands thoroughly after use and before eating, drinking, smoking, or using the restroom.

Do not eat, drink, or smoke in the work area.

Discard any clothing or other protective equipment that cannot be decontaminated.

Facilities storing or handling this material should be equipped with an emergency eyewash and safety shower.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| **Physical States:** | [ ] Gas [ X ] Liquid [ ] Solid |
| **Appearance and Odor:** | Opaque, milky white, thin emulsion with a light petroleum distillate odor. |
| **Melting Point:** | 0.00 C |
| **Boiling Point:** | > 100.00 C |
| **Autoignition Pt:** | No data. |
| **Flash Pt:** | No data. |
| **Explosive Limits:** | LEL: N.E. UEL: N.E. |
| **Specific Gravity (Water = 1):** | 0.916 - 0.936 |
| **Vapor Pressure (vs. Air or mm Hg):** | 0.52 MM HG at 68.0 F |
| **Vapor Density (vs. Air = 1):** | > 1 |
| **Evaporation Rate:** | < 1 |
| **Solubility in Water:** | 65 % |
| **Viscosity:** | 50 CPS at 77.0 F |
| **pH:** | Neutral |
| **Percent Volatile:** | > 99.0 % by weight. |
| **VOC / Volume:** | 30.0000 % WT |
| **Additional Physical Information** | VOC/VOLUME: 276 g/L |

## 10. STABILITY AND REACTIVITY

| | |
|---|---|
| **Stability:** | Unstable [ ] Stable [ X ] |
| **Conditions To Avoid - Instability:** | No data available. |
| **Incompatibility - Materials To Avoid:** | Incompatible with strong oxidizing agents. |
| **Hazardous Decomposition Or Byproducts:** | Decomposition may produce carbon monoxide and carbon dioxide. |
| **Possibility of Hazardous Reactions:** | Will occur [ ] Will not occur [ X ] |
| **Conditions To Avoid - Hazardous Reactions:** | No data available. |

## 11. TOXICOLOGICAL INFORMATION

**Toxicological Information:** This product has not been tested as a whole. Refer to section 2 for acute and chronic effects.

**Carcinogenicity/Other Information:** ACGIH A4 - Not Classifiable as a Human Carcinogen.

| CAS # | Hazardous Components (Chemical Name) | NTP | IARC | ACGIH | OSHA |
|---|---|---|---|---|---|
| 64742-47-8 | Hydrotreated light distillate (petroleum) | n.a. | n.a. | A4 | n.a. |

## 12. ECOLOGICAL INFORMATION

**General Ecological Information:** No information available for this product as a whole.

## 13. DISPOSAL CONSIDERATIONS

**Waste Disposal Method:** Dispose in accordance with federal, state, and local regulations.

## 14. TRANSPORT INFORMATION

**LAND TRANSPORT (US DOT):**

**DOT Proper Shipping Name:** Paint Related Material, Not Regulated by D.O.T.
**DOT Hazard Class:**
**UN/NA Number:**

**Additional Transport Information:**

## 15. REGULATORY INFORMATION

**EPA SARA (Superfund Amendments and Reauthorization Act of 1986) Lists**

| CAS # | Hazardous Components (Chemical Name) | S. 302 (EHS) | S. 304 RQ | S. 313 (TRI) |
|---|---|---|---|---|
| 64742-47-8 | Hydrotreated light distillate (petroleum) | No | No | No |

**This material meets the EPA 'Hazard Categories' defined for SARA Title III Sections 311/312 as indicated:**

[X] Yes [ ] No Acute (immediate) Health Hazard
[ ] Yes [X] No Chronic (delayed) Health Hazard
[ ] Yes [X] No Fire Hazard
[ ] Yes [X] No Sudden Release of Pressure Hazard
[ ] Yes [X] No Reactive Hazard

| CAS # | Hazardous Components (Chemical Name) | Other US EPA or State Lists |
|---|---|---|
| 64742-47-8 | Hydrotreated light distillate (petroleum) | CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No |

**Regulatory Information Statement:** All components of this material are listed on the TSCA Inventory or are exempt.

## 16. OTHER INFORMATION

**Revision Date:** 05/01/2015
**Preparer Name:** W.M. Barr and Company, Inc. (901)775-0100
**Additional Information About This Product:** No data available.
**Company Policy or Disclaimer:** The information contained herein is presented in good faith and believed to be accurate as of the effective date shown above. This information is furnished without warranty of

any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determination of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. Any use of this data and information must be determined by the user to be in accordance with applicable federal, state and local laws and regulations.

# SAFETY DATA SHEET
## Klean Strip Mineral Spirits for SCAQMD

Printed: 04/13/2015
Revision: 04/13/2015
Supersedes Revision: 03/27/2015

## 1. PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** Klean Strip Mineral Spirits for SCAQMD

**Company Name:** W. M. Barr
2105 Channel Avenue
Memphis, TN 38113

**Phone Number:** (901)775-0100

**Web site address:** www.wmbarr.com

**Emergency Contact:** 3E 24 Hour Emergency Contact (800)451-8346
**Information:** W.M. Barr Customer Service (800)398-3892

**Intended Use:** General Purpose Degreaser

**Synonyms:** CKPT94402SC, EKPT94401SC, GKPT94002SC, GKPT94002PSC, GKPT94002SCT, GKPT94400SCUL, QKPT94003SC, QKPT94003SCUL, QKPT94203SCUL

**Additional Information** This product is regulated by the United States Consumer Product Safety Commission and is subject to certain labeling requirements under the Federal Hazardous Substances Act. These requirements differ from the classification criteria and hazard information required for safety data sheets (SDS). The product label also includes other important information, including directions for use, and should always be read in its entirety prior to using the product.

## 2. HAZARDS IDENTIFICATION

**Flammable Liquids, Category 4**
**Aspiration Toxicity, Category 1**



**GHS Signal Word:** **Danger**

**GHS Hazard Phrases:** H227: Combustible liquid.
H304: May be fatal if swallowed and enters airways.

**GHS Precaution Phrases:** P210: Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P280: Wear protective gloves/protective clothing/eye protection/face protection.

**GHS Response Phrases:** P301+310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P331: Do NOT induce vomiting.
P370+378: In case of fire, use dry chemical powder to extinguish.

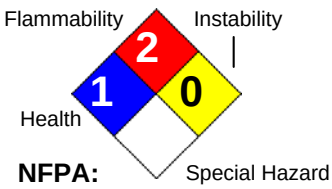
**GHS Storage and Disposal Phrases:** P403+235: Store in cool/well-ventilated place.
P405: Store locked up.
P501: Dispose of contents/container according to local, state and federal regulations.

**Hazard Rating System:**

**HMIS:**

| | | |
|---|---|---|
| HEALTH | * | 1 |
| FLAMMABILITY | | 2 |
| PHYSICAL | | 0 |
| PPE | | X |

**NFPA:**




**OSHA Regulatory Status:** This material is classified as hazardous under OSHA regulations.

**Potential Health Effects (Acute and Chronic):**

INHALATION:
Vapor harmful. Danger of serious damage to health by prolonged exposure through inhalation.

SKIN CONTACT:
Prolonged skin contact may cause skin irritation and/or dermatitis.

EYE CONTACT:
Liquid contact may cause irritation.

INGESTION:
Harmful or fatal if swallowed. May cause gastrointestinal irritation, nausea, vomiting, and diarrhea.

CHRONIC EFFECTS:
Reports have associated repeated and prolonged overexposure to solvents with neurological and other physiological damage.

TARGET ORGANS: skin, central nervous system

PRIMARY ROUTES OF ENTRY: inhalation, skin contact

**Medical Conditions Generally Aggravated By Exposure:** None known.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

| CAS # | Hazardous Components (Chemical Name) | Concentration | RTECS # |
|---|---|---|---|
| 64742-47-8 | Hydrotreated light distillate (petroleum) | 99.0 -100.0 % | OA5504000 |

## 4. FIRST AID MEASURES

**Emergency and First Aid Procedures:**

Skin:
Wash the skin thoroughly with water and soap, if available, while removing contaminated clothing. Seek medical attention if irritation develops or persists.

Eyes:
Immediately begin to flush eyes with water, remove any contact lens. Continue to flush the eyes for at least 15 minutes. Seek medical attention.

Inhalation:
Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get immediate medical attention.

Ingestion:
If swallowed, do NOT induce vomiting. Seek immediate medical attention. Call a physician, hospital emergency room, or poison control center immediately. Never give anything by mouth to an unconscious person.

**Signs and Symptoms Of Exposure:** See Potential Health Effects.

## 5. FIRE FIGHTING MEASURES

**Flammability Classification:** NFPA Class IIIA

**Flash Pt:** 190.00 F Method Used: Setaflash Closed Cup (Rapid Setaflash)

**Explosive Limits:** LEL: No data. UEL: No data.

**Autoignition Pt:** No data.

**Suitable Extinguishing Media:** Use carbon dioxide, dry powder, foam, or water spray / fog.

**Unsuitable Extinguishing Media:** Do not use straight water streams, as this may spread the fire.

**Fire Fighting Instructions:** Self-contained respiratory protection should be provided for fire fighters fighting fires in buildings or confined areas. Storage containers exposed to fire should be kept cool with water spray to prevent pressure build-up. Stay away from heads of containers that have been exposed to intense heat or flame.

Material float on water. Do not use straight water streams, as this may spread the fire.

**Flammable Properties and Hazards:** Material will float on water.

## 6. ACCIDENTAL RELEASE MEASURES

**Steps To Be Taken In Case Material Is Released Or Spilled:** Isolate the immediate area. Prevent unauthorized entry. Eliminate all sources of ignition in area and downwind of the spill area. Stay upwind, out of low areas, and ventilate closed spaces before entering. All equipment used when handling this product must be grounded or non-sparking. Do not touch or walk through spilled material. Stop leak if you can do so without risk. Prevent entry into waterways, sewers, or confined areas. A vapor suppressing foam may be used to reduce vapors. Absorb or cover with dry earth, sand, or other non-combustible material and transfer to compatible containers. For large spills, dike ahead of the spill for possible collection and reuse or disposal.

## 7. HANDLING AND STORAGE

**Precautions To Be Taken in Handling:** Read carefully all cautions and directions on product label before use. Since empty container retains residue, follow all label warnings even after container is empty. Dispose of empty container according to all regulations. Do not reuse this container.

Do not use near any source of heat or open flame, furnace areas, pilot lights, stoves, etc.

Ensure all equipment is electrically grounded before beginning transfer operations.

Avoid prolonged skin contact.

**Precautions To Be Taken in Storing:** Keep container tightly closed when not in use. Store in a cool, dry place. Do not store near any source of heat or open flame, furnace areas, pilot lights, stoves, etc.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

| CAS # | Partial Chemical Name | OSHA TWA | ACGIH TWA | Other Limits |
|---|---|---|---|---|
| 64742-47-8 | Hydrotreated light distillate (petroleum) | No data. | TLV: 200 mg/m3 | No data. |

| | |
|---|---|
| **Respiratory Equipment (Specify Type):** | For use in areas with inadequate ventilation or fresh air, wear a properly maintained and properly fitted NIOSH approved respirator for organic solvent vapors.<br><br>For OSHA controlled work places and other regular users - Use only with adequate ventilation under engineered air control systems designed to prevent exceeding the appropriate TLV.<br><br>A dust mask does not provide protection against vapors. |
| **Eye Protection:** | Chemical splash goggles should be worn to prevent eye contact. |
| **Protective Gloves:** | Wear gloves with as much resistance to the chemical ingredients as possible. Glove materials such as nitrile rubber may provide protection. Glove selection should be based on chemicals being used and conditions of use. Consult your glove supplier for additional information. Gloves contaminated with product should be discarded and not reused. |
| **Other Protective Clothing:** | Various application methods can dictate use of additional protective safety equipment, such as impermeable aprons, etc., to minimize exposure. Before reuse, thoroughly clean any clothing or protective equipment that has been contaminated by prior use. Discard any clothing or other protective equipment that cannot be decontaminated, such as gloves or shoes. |
| **Engineering Controls (Ventilation etc.):** | Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.<br><br>Use only with adequate ventilation to prevent buildup of vapors. Do not use in areas where vapors can accumulate and concentrate, such as basements, bathrooms or small enclosed areas. Whenever possible, use outdoors in an open air area. If using indoors open all windows and doors and maintain a cross ventilation of moving fresh air across the work area. If strong odor is noticed or you experience slight dizziness, headache, nausea or eye-watering -- STOP -- ventilation is inadequate. Leave area immediately and move to fresh air. |
| **Work/Hygienic/Maintenance Practices:** | Wash hands thoroughly after use and before eating, drinking, or smoking.<br><br>Do not eat, drink, or smoke in the work area.<br><br>Facilities storing or handling this material should be equipped with an emergency eyewash and safety shower. |

## 9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| **Physical States:** | [ ] Gas [ X ] Liquid [ ] Solid |
| **Appearance and Odor:** | Aromatic hydrocarbon-like odor. Free and clear, water-white liquid. |
| **Melting Point:** | No data. |
| **Boiling Point:** | No data. |
| **Autoignition Pt:** | No data. |
| **Flash Pt:** | 190.00 F Method Used: Setaflash Closed Cup (Rapid Setaflash) |
| **Explosive Limits:** | LEL: No data. UEL: No data. |
| **Specific Gravity (Water = 1):** | 0.7693 - 0.8093 |
| **Density:** | 6.567 LB/GL |
| **Vapor Pressure (vs. Air or mm Hg):** | 0.17 MM HG at 68.0 F |
| **Vapor Density (vs. Air = 1):** | > 1 |
| **Evaporation Rate:** | < 1 |
| **Solubility in Water:** | Not Soluble |
| **Viscosity:** | water thin |
| **Percent Volatile:** | 100.0 % by weight. |
| **VOC / Volume:** | 2.8800 G/L |
| **Additional Physical Information** | Product category, General Purpose Degreaser, is not a VOC as defined by the California Air Resources Board (CARB). |

## 10. STABILITY AND REACTIVITY

| | |
|---|---|
| **Stability:** | Unstable [ ] Stable [ X ] |
| **Conditions To Avoid - Instability:** | No data available. |
| **Incompatibility - Materials To Avoid:** | Incompatible with oxidizing agents. |
| **Hazardous Decomposition Or Byproducts:** | Thermal decomposition may produce carbon monoxide and carbon dioxide. |
| **Possibility of Hazardous Reactions:** | Will occur [ ] Will not occur [ X ] |
| **Conditions To Avoid - Hazardous Reactions:** | No data available. |

## 11. TOXICOLOGICAL INFORMATION

**Toxicological Information:** Refer to section 2 for acute and chronic effects.

**Chronic Toxicological Effects:**

**Carcinogenicity/Other Information:** ACGIH A4 - Not Classifiable as a Human Carcinogen.

| CAS # | Hazardous Components (Chemical Name) | NTP | IARC | ACGIH | OSHA |
|---|---|---|---|---|---|
| 64742-47-8 | Hydrotreated light distillate (petroleum) | n.a. | n.a. | A4 | n.a. |

## 12. ECOLOGICAL INFORMATION

**General Ecological Information:** No data available.

## 13. DISPOSAL CONSIDERATIONS

**Waste Disposal Method:** Dispose in accordance with applicable local, state, and federal regulations.

## 14. TRANSPORT INFORMATION

**LAND TRANSPORT (US DOT):**

**DOT Proper Shipping Name:** Paint Related Material, Not Regulated
**DOT Hazard Class:**
**UN/NA Number:**

**Additional Transport Information:** The shipper / supplier may apply one of the following exceptions: Combustible Liquid, Consumer Commodity, Limited Quantity, Viscous Liquid, Does Not Sustain Combustion, or others, as allowed under 49CFR Hazmat Regulations. Please consult 49CFR Subchapter C to ensure that subsequent shipments comply with these exceptions.

## 15. REGULATORY INFORMATION

**EPA SARA (Superfund Amendments and Reauthorization Act of 1986) Lists**

| CAS # | Hazardous Components (Chemical Name) | S. 302 (EHS) | S. 304 RQ | S. 313 (TRI) |
|---|---|---|---|---|
| 64742-47-8 | Hydrotreated light distillate (petroleum) | No | No | No |

**This material meets the EPA 'Hazard Categories' defined for SARA Title III Sections 311/312 as indicated:**

[X] Yes [ ] No Acute (immediate) Health Hazard
[X] Yes [ ] No Chronic (delayed) Health Hazard
[X] Yes [ ] No Fire Hazard
[ ] Yes [X] No Sudden Release of Pressure Hazard
[ ] Yes [X] No Reactive Hazard

| CAS # | Hazardous Components (Chemical Name) | Other US EPA or State Lists |
|---|---|---|
| 64742-47-8 | Hydrotreated light distillate (petroleum) | CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No |

| | |
|---|---|
| **Regulatory Information Statement:** | All components of this material are listed on the TSCA Inventory or are exempt. |

## 16. OTHER INFORMATION

| | |
|---|---|
| **Revision Date:** | 04/13/2015 |
| **Preparer Name:** | W.M. Barr EHS Department (901)775-0100 |
| **Additional Information About This Product:** | No data available. |
| **Company Policy or Disclaimer:** | The information contained herein is presented in good faith and believed to be accurate as of the effective date shown above. This information is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determination of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. Any use of this data and information must be determined by the user to be in accordance with applicable federal, state and local laws and regulations. |

OIL-DRI
CORPORATION OF AMERICA
410 North Michigan Avenue
Chicago, IL 60611

# Material Safety Data Sheet

Floor Absorbent (#1003000)

☎ (800) 424-9300 Emergency (312) 321-1515 Information

## 1. PRODUCT IDENTIFICATION

MSDS Number: 1003000

Identity: Floor Absorbent

Issued: January 3, 2005

Chemical Name: Fullers Earth

## 2. COMPOSITION

| Component | CAS Number | Amount | Exposure Limit |
|---|---|---|---|
| Quartz (crystalline silica) 0.000085% in the respirable range | 14808-60-7 | 10-20% bulk | PEL - 10 mg/m³/%Si02+2 TWA<br>TLV - 0.05 mg/m³ TWA |
| Fullers Earth | 8031-18-3 | 80-90% | PEL - 5 mg/m³ TWA (respirable fraction)<br>TLV - 3 mg/m³ TWA (respirable fraction)<br>TLV - 10 mg/m³ TWA (inhalable dust) |

PEL-OSHA Permissible Exposure Limit. TLV - American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value. TWA - 8 hour Weighted Average. STEL - Short Term Exposure Limit.

## 3. HAZARDS IDENTIFICATION

### EMERGENCY OVERVIEW

This product is a non-combustible, chemically inert mineral. This mineral sample contains a small amount of naturally occurring crystalline silica as quartz. Prolonged overexposure to respirable crystalline silica may cause lung disease (silicosis). IARC, in Monograph 68, has concluded that crystalline silica inhaled in the form of quartz from occupational sources is carcinogenic to humans (Group 1); however, carcinogenicity was not detected in all industrial circumstances studied. Because applications and exposure data indicate that exposure to respirable quartz in this product with normal use is well below the OSHA Permissible Exposure Limit (PEL) and ACGIH Threshold Limit value (TLV); and because the company is not aware of any scientific or medical data available indicating that exposure to dust from this product under conditions of normal use will cause silicosis or cancer, adverse affects would not be expected from normal use of this product.

### HEALTH HAZARDS

**INGESTION:** No adverse effects expected with unused material

**INHALATION:** Inhalation of excessive concentrations of dust may cause irritation of mucous membranes and upper respiratory tract.

**EYE:** Contact may cause mechanical irritation and possible injury.

**SKIN:** No adverse effects expected.

**SENSITIZATION:** No adverse effects expected.

**CHRONIC / CARCINOGENICITY:**

Inhalation of excessive concentrations of any dust, including this material, may lead to lung injury. This product contains crystalline silica. Excessive inhalation of respirable crystalline silica may cause silicosis, a progressive, disabling and fatal disease of the lung. Symptoms may include cough, shortness of breath, wheezing and reduced pulmonary function. The international Agency for Research on Cancer (IARC), in Monograph 68 has concluded that crystalline silica inhaled in the form of quartz or cristobalite, from occupational sources, is carcinogenic to humans (Group 1). However, in making the overall evaluation, the Working Group noted that carcinogenicity was not detected in all industrial circumstances studied. Carcinogenicity may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity or distribution of its polymorphs. The National Toxicology Program (NTP) classifies crystalline silica as reasonably anticipated to be a carcinogen. Because applications and exposure data indicate that exposure to respirable quartz in this product, with normal use, is well below the OSHA Permissible Exposure Limit (PEL) and ACGIH Threshold Limit Value (TLV); and because the company is not aware of any scientific or medical data available indicating that exposure to dust from this product under conditions of normal use will cause silicosis or cancer; adverse effects would not be expected from normal use of this product.

**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:**

None currently known

## 4. FIRST AID MEASURES

**EYE:** Immediately flush eyes with cool running water, lifting upper and lower lids. If irritation persists or foreign body in the eye, get immediate medical attention.

**SKIN:** None needed for normal use.

**INGESTION:** If used material is ingested, get medical attention due to possibility of chemical contamination. If large amount of unused material is swallowed, get immediate medical attention.

**INHALATION:** Remove to fresh air.

## 5. FIREFIGHTING MEASURES

**FLASH POINT:** This product is not combustible.

**FLAMMABLE LIMITS:** Not Applicable.

**EXTINGUISHING MEDIA:**

Use media that is appropriate for surrounding fire.

**UNUSUAL FIRE OR EXPLOSION HAZARDS:**

This product does not normally present a fire or explosion hazard, however, at concentration exceeding 0.1 oz/ft3 dusts can be ignited by sparks or other ignition sources. Minimize hazard by avoiding the generation of airborne dusts, electrically grounding equipment to prevent static

sparks and by eliminating ignition sources in the work area. Combustion products may be hazardous.

**SPECIAL FIREFIGHTING INSTRUCTIONS:**
None required.

**HAZARDOUS COMBUSTION PRODUCTS:**
None

## 6. ACCIDENTAL RELEASE MEASURES

Sweep up and collect for re-use or disposal.

## 7. HANDLING AND STORAGE

**HANDLING:** Avoid breathing dust. If clothing becomes dusty, launder before re-use.

**STORAGE:** Store in a dry area.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**EXPOSURE GUIDELINES:**
Refer to section 2.

**ENGINEERING CONTROLS:**
For operations where the exposure limit may be exceeded, local exhaust ventilation is recommended.

**RESPIRATORY PROTECTION:**
For operations where the exposure limit may be exceeded, a NIOSH/MSHA approved high efficiency particulate respirator is recommended.

**SKIN PROTECTION:** None required for normal use.

**EYE PROTECTION:** Safety glasses or goggles recommended.

**OTHER:** None required for normal use.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**APPEARANCE AND ODOR:**
Gray to tan granules; no odor.

**PHYSICAL STATE:** Solid

**BOILING POINT:** Not applicable

**VAPOR PRESSURE:** Not applicable

**VAPOR DENSITY:** Not applicable

**SOLUBILITY IN WATER:**
Insoluble

**SPECIFIC GRAVITY:** 2.2

**pH:** Not applicable

**MELTING POINT:** Not applicable

**OCTANOL / WATER COEFFICIENT:**
Not available

## 10. STABILITY AND REACTIVITY

**STABILITY:** Stable

**INCOMPATIBILITY:** Contact of dry clay with turpentine, vegetable oil or other unsaturated organic compounds, or with hydrofluoric acid may generate heat and/or fire. Do not use with these compounds.

**HAZARDOUS DECOMPOSITION PRODUCTS:**
None

**HAZARDOUS POLYMERIZATION:**
Will not occur.

## 11. TOXICOLOGICAL INFORMATION

No data available

## 12. ECOLOGICAL INFORMATION

No data available

## 13. DISPOSAL CONSIDERATIONS

Dispose in accordance with local, state and federal environmental regulations. Unused material is suitable for disposal in sanitary landfill. Used material may be subject to regulation, depending on the nature of the material absorbed. Check with appropriate regulatory authority for used material containing hazardous waste.

## 14. TRANSPORTATION INFORMATION

**PROPER SHIPPING NAME:**
Not regulated

**UN NUMBER:** Not applicable

**HAZARD CLASS / PACKING GROUP:**
Not applicable

**LABELS REQUIRED:** None

## 15. REGULATORY INFORMATION

**CERCLA / SUPERFUND:** None

**SARA HAZARD CATEGORY (311/312):**
Chronic Health

**SARA 313:** None

**TSCA:** All of the components of this product are listed on the EPA TSCA Inventory or exempt from notification requirements.

**EINECS:** All of the components of this product are listed on the EINECS Inventory or exempt from notification requirements.

**EEC R&S PHRASES:** Not classified as Dangerous under EEC Labeling Regulations.

**JAPAN MITI:** All of the components of this product are existing chemical substances as defined in the Chemical Substances Control Law.

**AICS:** All of the components of this product are listed on the AICS Inventory or exempt from notification requirements.

**CANADIAN DSL:** All of the components of this product are listed on the Canadian Domestic Substances List or exempt from notification requirements.

**CA PROPOSITION 65:**
This product contains respirable crystalline silica, which is known to the state of California to cause cancer.

## 16. OTHER INFORMATION

**NFPA RATING:** Health = 1, Fire = 0, Reactivity = 0

**HMIS RATING:** Health = 1*, Fire = 0, Reactivity = 0

The information in this data sheet is believed to be accurate. However, each purchaser should make its own test to determine the suitability of the product for its purposes. OIL-DRI CORPORATION OF AMERICA MAKES NO WARRANTY, EXPRESSED OR IMPLIED, WITH RESPECT TO THE PRODUCT and assumes no responsibility for any risk or liability arising from the use of the information or the product. Statements about the product should not be construed as recommendations to use the product in infringement of any patent.

C/R 001 9/06

**Royston Division**
Chase Corporation
128 First St. (Blawnox)
Pittsburgh, PA 15238
Phone 412-828-1500
Fax 412-828-4826

CHASE Specialty Coatings
ROYSTON ISO 9001: 2000 REGISTERED

# NYSDOT Materials Details C/R 001 9/06
# Royston 10-A Waterproofing Membrane

The following is the proper procedure to use when installing Royston bridge deck membranes. This guide will cover the recommended tools to use, deck preparation and membrane installation.

Recommended Tools for Installation:

1. Lambs wool roller, squeegee or airless spray equipment
2. Utility knife, screw driver, hammer, one inch trowel
3. Chalk line, tape measure
4. 6-foot broom handle or equivalent
5. Propane torch with rosebud tip
6. Jiffy Mixer Blade
7. ½ inch (13 mm) Drill
8. Gloves, rags and clean-up solvents

The above may not be all the tools that an individual installer may need, but is recommended for proper installation.

## ROYSTON MATERIALS NEEDED

1. Royston Bridge Deck Membrane
2. Royston Primer/Adhesive
3. Royston 104CM (Caulkable Mastic)

## PACKAGING AND STORAGE

**Royston membrane**s are packaged in a reflective, high optical density material that provides protection from ultra-violet light during outdoor storage. However, it is recommended that the product be stored in a cool, dry place away from direct sunlight. Exposure to direct sunlight for extended periods will make the membrane compound very tacky and difficult to work with, however when the ambient temperature falls below 55°F (13°C), keep the membrane in the sun to enhance the *tackiness of the compound.*

**Royston Primer/Adhesives** should be stored in a cool dry place until used.

**Royston 104CM** must be stored in a warm place 55°F (13°C) or above at all times before use.

## DECK PREPARATION

Royston membranes can be placed over many types of surfaces including concrete, asphalt, wood, or steel.

## DECK TYPES

1. New concrete decks must be properly cured for a minimum of seven (7) days, unless the agency specification differs, then the agency specification takes precedence.
   A. The Concrete surface must be smooth or a broom finish.

2. Existing concrete decks must be structurally sound.
   A. All concrete repairs shall be done in accordance with agency specification materials and procedure.
   B. Concrete surface must not have any irregularities deeper than ¼ inch (6.35mm) depth.

C. All old membrane must be removed.
D. Grooves in the deck as a result of milling operation shall not exceed ¼ inch (6 mm) depth.

3. Wooden bridge decks do, on occasion, require membrane waterproofing.
A. A leveling scratch course will be placed on the wood deck to provide a smooth surface.

4. Steel bridge decks require waterproofing.
A. Remove all overlay material so that the deck is free and clean for a new installation.
B. The steel deck shall be shot-blasted in accordance with latest version of SP-4.

## DECK PREPARATION PROCEDURES

The deck must be clean, dry, and free of all loose debris and moisture.

**New Asphalt surfaces and/or leveling scratch courses do not need Royston Primer/Adhesives.**

## DECK MOISTURE CONTENT

Concrete decks that have received a high level of rain require that the moisture in the deck be checked to prevent membrane blistering. Use the plastic sheet method or a moisture meter to determine moisture content. Maximum moisture content will be not greater than 4%.

## ROYSTON PRIMER/ADHESIVE INSTALLATION

1. Royston offers several Primer/Adhesives.

A. **713A** is the general purpose.
B. **713B** is it is a low VOC primer where required under current agency specifications.
C. **740** is the high tack Adhesive for ambient temperatures below 45°F (7°C).
D. **750** is the spray-able Adhesive.

2. Refer to all Technical Data and MSDS sheets shipped with each order.

3. Thoroughly mix the Primer/Adhesives using a ½ inch (13 mm) drill with a jiffy mixer.

4. Application rate per gallon is as follows for the different Adhesive:

| | |
|---|---|
| **713A&713B** | 200 to 300 sq. ft. (19 to 28 m²) |
| **740** | 150 to 200 sq. ft. (14 to 19 m²) |
| **750** | 250 to 300 sq. ft. (22 to 28 m²) |

5. The primer must dry to the touch, which takes approximately 30 minutes on a 70°F (21°C) degree day.

A. Only apply the Adhesive/Primer to the deck area which is to be covered within 24 hours.

**713A, 713B, and 740** are applied using a roller, brush, or squeegee. **750** is sprayed using equipment such as a Graco 30-1 sprayer or equal with a 6 degree x .035 tip.

**ELIMINATE ALL PUDDLES.**

## MASTIC APPLICATION

Apply **Royston 104CM (Caulkable Mastic)** to all perimeter areas where the membrane will terminate such as curbs, parapet walls, abutments, joints and drains. Refer to Deck preparation procedure listed above. *Note: 104CM is used for terminations only and not to be used underneath membrane.*

When the vertical face of the curb meets the deck. - At the terminating section of Vertical Membrane, heat seal all vertical edges and apply 104CM.

## MEMBRANE APPLICATION

1. Application of the membrane can start once the 104CM and Royston Primer/Adhesive is dry. On crowned deck surfaces, place membrane sheets in a "shingle" fashion working from the curbside to the center crown. On flat deck surfaces, start at one curb and proceed across to the other. Measure the width of the deck in at least three places and divide the widest number by 44 ½ inches (1130 mm) for the number of sheets it will take to cover the deck width. Note: 104CM is used for terminations only and not to be used underneath membrane.

2. Start the roll with the **Zip Strip** away from the curb.

3. Roll out the membrane with the release liner side down. Remove the release liner from the bottom by pulling the liner at 45° angle. This helps to keep tension on the membrane as it lays down minimizing the wrinkles and eliminating air pockets. Once the roll is down push the membrane into good contact with the deck using a push broom or a hand roller, make sure the edge at the curb is embedded in the 104CM
   A. All additional rolls are to be overlapped in a shingle fashion utilizing 3 ½ inch (89 mm) zip strip as a guide.
   B. With the installation of each roll of membrane push the membrane into good contact with the deck using a push broom or hand roller to minimize wrinkles and air pockets.
   C. As each roll is placed, the final step is to pull the zip strip release liner from the roll. When reaching the crown of the bridge ensure there is clean and dry membrane to terminate with a 3 ½ inch (89 mm) overlap.
   D. When terminating the membrane at the crown, ensure that there is an overlap of the adjoining membrane with a minimum of 3 ½ inch (89 mm).
   E. All longitudinal sections of membrane terminations shall be staggered and heat sealed with a 6 inch (150 mm) overlap.
   F. Should heat sealing not be an option, then the use of 104CM shall be used as noted in item E.

   Note: Each edge of the 4'x50' membrane rolls has a zip strip used for termination. Depending on the bridge and layout it may require that the NON ZIP-STRIP longitudinal side be overlapped. When this is necessary overlay approximately 3 ½ inch (89mm) and Heat Seal. On the transverse ends they should also be overlapped in the same fashion and heat sealed.

   **Heat Sealing** is the process of taking a propane torch and waving it over the area you want to seal, looking for the point when the top of the membrane shows signs of melting. Getting the technique down should not take a long time, but make sure you are not applying too much heat and melting through the membrane. The domestic type propane torches are to small and no effective in heat sealing. A unit that uses a 20 lb. (9 kg) propane bottle does a good job and quickly.

   All edges that are overlapped without a Zip Strip must be heat sealed or sealed with 104CM.

4. **Patches:** Trapped stones under the membrane must be removed so not to puncture the membrane when the asphalt is placed. Remove the stone, by making a C shaped cut around the stone. Peel back the membrane, remove the stone then push the membrane back into place. Cut a 6 inch (150 mm) by 6 inch (150 mm) patch from a piece of membrane to cover the cut. Place it over the cut and then heat seal the patch. Similarly, cuts, nicks, gouges, rips, tears, etc., are to be repaired using the same procedure.

5. **Curb Strips:** Position so the curb strip edge is ½ inch below the top of the proposed wearing surface. Royston Primer/Adhesives are to be applied on the vertical curb surface, to the termination of the curb strip. Establish a reference by striking a chalk line. (For Example: If 6 inch (150 mm)wide curb strips and the wearing surface 2-1/2inches (64 mm) deep are specified, strike a chalk line on the deck 4 inches (100 mm) from the curb. Align the

edge of the 6 inch (100 mm) wide strip with the chalk line, smooth and press the strip toward the curb, and tightly into the corner, then up the vertical curb for 2 inches (50mm) to the pre-established height of ½ inch (13 mm) below the final pavement). Curb Strips can be installed before or after the deck membrane is installed, but it does not change the curb detail involving the Flex Flo Adhesive sealant. Heat sealing the curb strip to the deck membrane and to the curb is required. Use a small trowel to press the vertical edge against the curb as you are heating it. Again, make sure you are not over heating the membrane.

**6.** The Asphalt Overlay needs to be applied as soon as possible after the membrane installation to avoid damage to the membrane. The minimum asphalt temperature is 290°F (143°C).

# MATERIAL SAFETY DATA SHEET

Manufacturer/Supplier: Stirling Lloyd Products, Inc.
Address: 420 Sackett Point Road, Unit 4A, North Haven, CT 06473
Telephone: 203-230-9448
Fax: 203-230-1025
24 Hour Emergency Tel. No.: (800)-424-9300

## SECTION 1 - MATERIAL IDENTIFICATION AND INFORMATION

Trade Name: ELIMINATOR S/HM/UHM
Chemical Name: Methyl methacrylate - based dispersion
Application: Waterproofing membrane for concrete and steel.

| Components* | Trade Secret Registry Numbers** | CAS No. | Weight % | OSHA PEL | ACGIH TLV |
|---|---|---|---|---|---|
| Acrylic polymer (non-hazardous)[5] | NJ 80100283-5013p | Not applicable | 15-40 | None | None |
| Calcium carbonate[2,4-6] | | 1317-65-3 | 10-30 | 15 mg/m$^3$ total | 10 mg/m$^3$ total |
| Methyl methacrylate (MMA)[1-6] | | 80-62-6 | 10-30 | 100 ppm | 100 ppm |
| n-Butyl methacrylate[4-6] | | 97-88-1 | 10-30 | None | None |
| Silica, amorphous, fumed[2,5] | | 7631-86-9 | 1-5 | 20 mppcf total | 0.1 mg/m$^3$ respirable |
| Iron oxide[2,4-6] | | 1309-37-1 | 1-5 | 10 mg/m$^3$ total | 5 mg/m$^3$ total |
| Titanium dioxide[2,3,5,6***] | | 13463-67-7 | 1-5 | 15 mg/m$^3$ total | 10 mg/m$^3$ total |

*These components are subject to the following reporting requirements as noted above:
[1] SARA Title III Section 304 [2] SARA Title III Section 311-312 [3] SARA Title III Section 313
[4] M.G.L. c.111F Section 5 [5] N.J.A.C. 8:59-2 [6] 34 P.C. Section 305

**Trade secret registry numbers for the product as a whole have been assigned as follows:
Massachusetts TS-99-243-006

***Present in white or grey formulations only.

## SECTION 2 - PHYSICAL/CHEMICAL CHARACTERISTICS

Appearance and Odor: Grey, white, or yellow thixotropic liquid with characteristic methacrylate odor (sweet ester odor).
Odor Threshold: MMA <0.34 ppm
Specific Gravity ($H_2O = 1$): 1.33
Vapor Pressure: MMA 40 mm @ 77.9F (25.5C)
Vapor Density (Air = 1): MMA 3.45
Evaporation Rate (Butyl acetate = 1): >1
Boiling Point: MMA 214F (101C)
Melting Point: MMA - 58F (-50C)
pH: Not available
Coefficient of Water/Oil Distribution: Not applicable
Water Reactive: No

## SECTION 3 - FIRE AND EXPLOSION HAZARD DATA

Flash Point: 52.7F (11.5C) CC
Auto-Ignition Temperature: MMA 790F (421C)
Flammability Limits in Air % by Volume LEL: MMA 2.1%
UEL: MMA 12.5%
Extinguisher Media: Alcohol foam, carbon dioxide, dry chemical, water fog, cover with sand.
Special Fire Fighting Procedures: Evacuate area. Wear self-contained breathing apparatus (NIOSH/MSHA -approved) and protective clothing. Use water spray to cool warm or bulging containers. Maintain safe distance or protected location. Carefully loosen bung valve to vent pressure. Reclose and dispose of container.
Unusual Fire and Explosion Hazards: Vapor is heavier than air and forms explosive mixture @ 21000 ppm, 1 atm (760 mm Hg), 77F (25C). Vapor may travel to distant source of ignition and flash back. Heat, aging or contamination can lead to polymerization and/or violent rupture of sealed containers.

## SECTION 4 - REACTIVITY HAZARD DATA

STABILITY Stable: X Unstable:
Conditions to Avoid: Aging, electrostatic buildup, heat, ignition sources, sunlight. Maintain fresh air supply in storage area. Allow air space over liquid within containers.
Incompatibility (Materials to Avoid): Radical sources (e.g. acids, alkalies, amines, azo compounds, heavy metal ions, peroxides, rust, sulfur compounds), other foreign matter. Paints and various plastics can be softened/dissolved by this material.
Hazardous Decomposition/ Combustion Products: Water, oxides of carbon.
HAZARDOUS POLYMERIZATION May Occur: X Will Not Occur:
Conditions to Avoid: Contamination with radical source or other foreign matter, heat, sunlight.

## SECTION 5 - HEALTH HAZARD DATA

| | |
|---|---|
| PRIMARY ROUTES OF ENTRY: | Eye Contact: X Inhalation: X Ingestion: Skin Absorption: X Skin Contact: X Not Hazardous: |
| TLV (ACGIH): | See Section 1 |
| PEL (OSHA): | See Section 1 |
| TOXICOLOGICAL DATA | |
| LC 50: | MMA 3750 ppm rat ihl, others not available |
| LD 50: | MMA 9400 mg/kg rat orl, n-BuMA 13500 mg/kg mus orl, others not available |
| Carcinogen Listed In: | |
| NTP: | No |
| OSHA: | No |
| IARC Monograph: | No |
| C.H.S.C. Section 25249.5: | No |
| Mutagenicity: | Not available |
| Reproductive Toxicity: | Not available |
| Teratogenicity: | Not available |
| Name of Toxicologically Synergistic Products: | Not available |

HEALTH HAZARDS

| | |
|---|---|
| Acute: | Irritant to eyes, skin and respiratory system. Do not wear contact lenses when using this product. |
| Chronic: | None known. |
| Signs/Symptoms of Exposure: | Dermatitis, dizziness, drowsiness, headache, nausea, unconsciousness. |
| Medical Conditions Generally Aggravated by Exposure: | Conjunctivitis of the eye, dermatitis, asthma, respiratory diseases. |

EMERGENCY FIRST AID PROCEDURES - Seek immediate medical assistance for further treatment, observation and support.

| | |
|---|---|
| Eye Contact: | Flush eyes with running cold water for several minutes. |
| Skin Contact: | Wash skin thoroughly with soap and water. Remove contaminated clothing. |
| Inhalation: | Move patient to fresh air; keep warm and at rest. Loosen clothing. |
| Ingestion: | If conscious, dilute by giving two glasses of water to drink. Do not induce vomiting. If unconscious, transport to hospital. |

## SECTION 6 - CONTROL AND PROTECTIVE MEASURES

| | |
|---|---|
| Respiratory Protection: | NIOSH/MSHA-approved organic vapor respirator when exposure limits are exceeded; self-contained apparatus during emergencies. |
| Protective Gloves: | Impervious, e.g. neoprene. |
| Eye Protection: | Splash-proof goggles meeting ANSI Z87.1 - 1989. |

VENTILATION TO BE USED

| | |
|---|---|
| Local Exhaust: | Cross-ventilation when within exposure limits. |
| Mechanical: | Explosion-proof ventilation at point of operation when limits are exceeded. |
| Other Protective Clothing and Equipment: | Clothing based on impervious, anti-static materials, eye baths, fire extinguishers, safety showers. |
| Hygienic Work Practices: | Wash hands thoroughly after use. Dispose of contaminated clothing. |

## SECTION 7 - PRECAUTIONS FOR SAFE HANDLING AND USE/LEAK PROCEDURES

| | |
|---|---|
| Steps to be Taken if Material is Spilled or Released: | Evacuate area. Eliminate ignition sources. Wear protective gear. Dike and absorb spill with inert material (e.g. sand, sawdust, vermiculite, etc.). Collect with non-sparking tools and place in leak-proof containers for disposal. Prevent spills from reaching sewers and open bodies of water. Report spills in excess of RQ to local authorities. |
| Waste Disposal Methods: | Polymerization to solid with 50% benzoyl peroxide powder, or dispose of in accordance with current local, state and federal regulations. |
| Precautions to be Taken in Handling and Storage: | Protect from sunlight and contamination. Indoor storage must be restricted to areas meeting NFPA/OSHA standards with overhead sprinklers. Avoid ignition sources; no smoking. Maintain fresh air supply in storage areas. Allow air space over liquid within containers. Ground all containers when transferring liquid; keep closed when not in use. Advisable to use within six (6) months. Maximum storage temperature 90F (32C). |
| Other Precautions and/or Special Hazards: | Containers remain hazardous when empty. Product residue is hazardous and flammable. Do not cut, drill, torch, or weld on or near containers. Do not reuse. |
| NFPA Rating: | Health: 2 Flammability: 3 Reactivity: 2 Special: Not applicable |

## SECTION 8 - SHIPPING INFORMATION

| | |
|---|---|
| Proper DOT Shipping Name: | Resin Solution |
| Hazard Class: | Flammable Liquid |
| Reportable Quantity (RQ): | MMA 1000 lbs (454 kg) |
| Label: | Flammable Liquid |
| UN No: | 1866 |
| Class: | 3 |
| Packaging Group: | II |
| NMFTA Item: | 156240 |
| Class: | 60 |
| Authorized Container: | 44 lb (20 kg) pail or 440 lb (200 kg) drum meeting UN1A1, UN1A2, UN1H1, or UN1H2 |

| | |
|---|---|
| Prepared by: | Technical Director |
| Date: | 08/92 |
| Supersedes: | 05/92 |

The information contained in this literature is accurate to the best of the publisher's knowledge. We pursue a progressive research and development policy and reserve the right to alter any of the details contained herein without notice. The information given must not be taken in any way to form a specification and Stirling Lloyd Products, Inc. will not accept any liability whatsoever arising out of the use of the information contained herein. This data sheet does not form part of the "Conditions of Sale" of our products.

# MATERIAL SAFETY DATA SHEET

Manufacturer/Supplier: Stirling Lloyd Products, Inc.
Address: 152 Rockwell Road, Building A, • Newington, CT 06111 USA
Telephone: 860-666-5008
Fax: 860-666-5106
24-Hour Emergency No: 800-424-9300

## SECTION 1 - MATERIAL IDENTIFICATION AND INFORMATION

Trade Name: PAR 1
Chemical Name: Methyl methacrylate - based dispersion
Application: Concrete primer for Eliminator system and related products.

| Components* | Trade Secret Registry Numbers** | CAS No. | Weight % | OSHA PEL | ACGIH TLV |
|---|---|---|---|---|---|
| Methyl methacrylate (MMA) [1-6] | | 80-62-6 | 60-100 | 100 ppm | 100 ppm |
| Acrylic polymer (non-hazardous) [5] | NJ 80100283-5013p | Not applicable | 30-60 | None | None |
| 2-Ethylhexyl acrylate [4-6] | | 103-11-7 | 10-30 | None | None |

*These components are subject to the following reporting requirements as noted above:
[1] SARA Title III Section 304 [2] SARA Title III Section 311-312 [3] SARA Title III Section 313
[4] M.G.L. c.111F Section 5 [5] N.J.A.C. 8:59-2 [6] 34 P.C. Section 305
**Trade secret registry numbers for the product as a whole have been assigned as follows:
Massacusetts TS-99-243-013

## SECTION 2 - PHYSICAL/CHEMICAL CHARACTERISTICS

Appearance and Odor: Colorless mobile liquid with characteristic methacrylate odor (sweet ester odor).
Odor Threshold: MMA < 0.34 ppm
Specific Gravity ($H_2O$=1): 1.03
Vapor Pressure: MMA 40 mm @ 77.9°F (25.5°C)
Vapor Density (Air = 1): MMA 3.45
Evaporation Rate (Butyl acetate =1): >1
Boiling Point: MMA 214°F (101°C)
Melting Point: MMA - 58°F (-50°C)
pH: Not available
Coefficient of Water/Oil Distribution: Not applicable
Water Reactive: No

## SECTION 3 - FIRE AND EXPLOSION HAZARD DATA

Flash Point: 52.7°F (11.5°C) CC
Auto-Ignition Temperature: MMA 790°F (421°C)
Flammability Limits in Air % by Volume LEL: MMA 2.1%
UEL: MMA 12.5%
Extinguisher Media: Alcohol foam, carbon dioxide, dry chemical, water fog, cover with sand.
Special Fire Fighting Procedures: Evacuate area. Wear self-contained breathing apparatus (NIOSH/MSHA -approved) and protective clothing. Use water spray to cool warm or bulging containers. Maintain safe distance or protected location. Carefully loosen bung valve to vent pressure. Reclose and dispose of container.
Unusual Fire and Explosion Hazards: Vapor is heavier than air and forms explosive mixture @ 21000 ppm, 1 atm (760 mm Hg), 77°F (25°C). Vapor may travel to distant source of ignition and flash back. Heat, aging or contamination can lead to polymerization and/or violent rupture of sealed containers.

## SECTION 4 - REACTIVITY HAZARD DATA

STABILITY Stable: X Unstable:
Conditions to Avoid: Aging, electrostatic buildup, heat, ignition sources, sunlight. Maintain fresh air supply in storage area. Allow air space over liquid within containers.
Incompatibility (Materials to Avoid): Radical sources (e.g. acids, alkalies, amines, azo compounds, heavy metal ions, peroxides, rust, sulfur compounds), other foreign matter. Paints and various plastics can be softened/dissolved by this material.
Hazardous Decomposition/ Combustion Products: Water, oxides of carbon.
HAZARDOUS POLYMERIZATION: May Occur: X Will Not Occur:
Conditions to Avoid: Contamination with radical source or other foreign matter, heat, sunlight.

## SECTION 5 - HEALTH HAZARD DATA

PRIMARY ROUTES OF ENTRY: Eye Contact: X Inhalation: X Ingestion: Skin Absorption: X Skin Contact: X Not Hazardous:

TLV (ACGIH): See Section 1
PEL (OSHA): See Section 1

TOXICOLOGICAL DATA -
LC 50: MMA 3750 ppm rat ihl, others not available.
LD 50: MMA 9400 mg/kg rat orl, 2-EHA 6500 mg/kg rat orl, others not available.
Carginogen Listed In
NTP: No
OSHA: No
IARC Monograph: No
C.H.S.C. Section 25249.5: No

| | |
|---|---|
| Mutagenicity: | Not available |
| Reproductive Toxicity: | Not available |
| Teratogenicity: | Not available |
| Name of Toxicologically Synergistic Products: | Not available |

HEALTH HAZARDS -

| | |
|---|---|
| Acute: | Irritant to eyes, skin and respiratory system. Do not wear contact lenses when using this product. |
| Chronic: | None known. |
| Signs/Symptoms of Exposure: | Dermatitis, dizziness, drowsiness, headache, nausea, unconsciousness. |
| Medical Conditions Generally Aggravated by Exposure: | Conjunctivitis of the eye, dermatitis, asthma, respiratory diseases. |

**EMERGENCY FIRST AID PROCEDURES:**

Seek immediate medical assistance for further treatment, observation and support.

| | |
|---|---|
| Eye Contact: | Flush eyes with running cold water for several minutes. |
| Skin Contact: | Wash skin thoroughly with soap and water. Remove contaminated clothing. |
| Inhalation: | Move patient to fresh air; keep warm and at rest. Loosen clothing. |
| Ingestion: | If conscious, dilute by giving two glasses of water to drink. Do not induce vomiting. If unconscious, transport to hospital. |

## SECTION 6 - CONTROL AND PROTECTIVE MEASURES

| | |
|---|---|
| Respiratory Protection: | NIOSH/MSHA-approved organic vapor respirator when exposure limits are exceeded; self-contained apparatus during emergencies. |
| Protective Gloves: | Impervious, e.g. neoprene. |
| Eye Protection: | Splash-proof goggles meeting ANSI Z87.1 - 1989. |

VENTILATION TO BE USED:

| | |
|---|---|
| Local Exhaust: | Cross-ventilation when within exposure limits. |
| Mechanical: | Explosion-proof ventilation at point of operation when limits are exceeded. |
| Other Protective Clothing and Equipment: | Clothing based on impervious, anti-static materials, eye baths, fire extinguishers, safety showers. |
| Hygienic Work Practices: | **Wash hands thoroughly after use. Dispose of contaminated clothing.** |

## SECTION 7 - PRECAUTIONS FOR SAFE HANDLING AND USE / LEAK PROCEDURES

| | |
|---|---|
| Steps to be Taken If Material is Spilled or Released: | Evacuate area. Eliminate ignition sources. Wear protective gear. Dike and absorb spill with inert material (e.g. sand, sawdust, vermiculite, etc.). Collect with non-sparking tools and place in leak-proof containers for disposal. Prevent spills from reaching sewers and open bodies of water. Report spills in excess of RQ to local authorities. |
| Waste Disposal Methods: | Polymerization to solid with 50% benzoyl peroxide powder, or dispose of in accordance with current local, state and federal regulations. |
| Precautions to be Taken in Handling and Storage: | Protect from sunlight and contamination. Indoor storage must be restricted to areas meeting NFPA/OSHA standards with overhead sprinklers. Avoid ignition sources; no smoking. Maintain fresh air supply in storage areas. Allow air space over liquid within containers. Ground all containers when transferring liquid; keep closed when not in use. Advisable to use within six (6) months. Maximum storage temperature 90°F (32°C). |
| Other Precautions and/or Special Hazards: | Containers remain hazardous when empty. Product residue is hazardous and flammable. Do not cut, drill, torch, or weld on or near containers. Do not reuse. |
| NFPA Rating: | Health: 2 Flammability: 3 Reactivity: 2 Special: Not applicable |

## SECTION 8 - SHIPPING INFORMATION

| | |
|---|---|
| Proper DOT Shipping Name: | Resin Solution |
| Hazard Class: | Flammable Liquid |
| Reportable Quantity (RQ): | MMA 1000 lbs (454 kg) |
| Label: | Flammable Liquid |
| UN No: | 1866 |
| UN Class: | 3 |
| Packaging Group: | II |
| NMFTA Item: | 156240 |
| Class: | 60 |
| Authorized Container: | 55 lb (25 kg) pail or 440 lb (200 kg) drum meeting UN1A1, UN1A2, UN1H1, or UN1H2. |

| | |
|---|---|
| Prepared by: | Technical Director |
| Date: | 06/03 |
| Supersedes: | 12/96 |

The information contained in this literature is accurate to the best of the publisher's knowledge. We pursue a progressive research and development policy and reserve the right to alter any of the details contained herein without notice. The information given must not be taken in any way to form a specification and Stirling Lloyd Products, Inc. will not accept any liability whatsoever arising out of the use of the information contained herein. This data sheet does not form part of the "Conditions of Sale" of our products.

# MATERIAL SAFETY DATA SHEET

Manufacturer/Supplier: Stirling Lloyd Products, Inc.
Address: 420 Sackett Point Road, Unit 4A, North Haven, CT 06473
Telephone: 203-230-9448
Fax: 203-230-1025
24-Hour Emergency No: (800)-424-9300

## SECTION 1 - MATERIAL IDENTIFICATION AND INFORMATION

Trade Name: Tack Coat SA 1030
Chemical Name: Modified Bitumen in hydrocarbon resin
Application: Hot melt adhesive for the bonding of hot applied bituminous materials to Eliminator waterproofing membrane.

| Components* | Trade Secret Registry Numbers | CAS No. | Weight % | OSHA PEL | ACGIH TLV |
|---|---|---|---|---|---|
| Bitumen[2,5,6] | | SEQ-65-3 | 60-100 | None | None |
| Hydrocarbon resin (non-hazardous) [5] | NJ 80100283-5020p | Not applicable | 10-30 | None | None |
| Tall oil resin ester [5] | | 8050-31-5 | 10-30 | None | None |

* These components are subject to the following reporting requirements as noted above:
[1] SARA Title III Section 304 [2] SARA Title III Section 311-312 [3] SARA Title III Section 313
[4] M.G.L. c.111F Section 5 [5] N.J.A.C. 8:59-2 [6] 34 P.C. Section 305

## SECTION 2 - PHYSICAL/CHEMICAL CHARACTERISTICS

Appearance and Odor: Black solid with characteristic bituminous odor.
Odor Threshold: Not available
Specific Gravity ($H_20$=1): 1.0
Vapor Pressure: Not Applicable
Vapor Density (Air = 1): Not Applicable
Evaporation Rate (Butyl acetate =1): Not Applicable
Boiling Point: Not Available
Melting Point: 167°-212°F (75°-100°C)
pH: Not Available
Coefficient of Water/Oil Distribution: Not Applicable
Water Reactive: No

## SECTION 3 - FIRE AND EXPLOSION HAZARD DATA

Flash Point: >390°F (200°C) COC
Auto-Ignition Temperature: Not Available
Flammability Limits in Air
% by Volume LEL: Not Available
UEL: Not Available
Extinguishing Media: Alcohol foam, carbon dioxide
Special Fire Fighting Procedures: Evacuate area. Wear self-contained breathing apparatus (NIOSH/MSHA approved) and protective clothing. Maintain safe distance or protected location..
Unusual Fire and Explosion Hazards: None

## SECTION 4 - REACTIVITY HAZARD DATA

STABILITY Stable: X Unstable:
Conditions to Avoid: None
Incompatibility (Materials to Avoid): None
Hazardous Decomposition/ Combustion Products: None
HAZARDOUS POLYMERIZATION May Occur: Will Not Occur: X
Conditions to Avoid: None

## SECTION 5 - HEALTH HAZARD DATA

PRIMARY ROUTES OF ENTRY Eye contact: X Inhalation: X Ingestion: Skin Absorption: X Skin Contact: X Not Hazardous:
TLV (ACGIH): See Section 1
PEL (OSHA): See Section 1

TOXICOLOGICAL DATA-
LC 50: Not Available
LD 50: Not Available
Carcinogen Listed in
NTP: No
OSHA: No
IARC Monograph: No
C.H.S.C. Section 25249.5: Yes (Bitumen)
Mutagenicity: Not Available
Reproductive Toxicity : Not Available

| | |
|---|---|
| Taratogenicity: | Not Available |
| Name of Toxicologically Synergistic Products: | Not Available |

HEALTH HAZARDS -

| | |
|---|---|
| Acute: | Irritant to eyes, skin and respiratory system. The material is used at high temperature and the immediate hazard is one of burns from hot material. |
| Chronic: | None known |
| Signs and Symptoms of Exposure: | Burns, dermatitis, headache, nausea. |
| Medical Conditions Generally Aggravated by exposure: | Asthma, dermatitis, respiratory diseases. |

**EMERGENCY FIRST AID PROCEDURES:**

Seek immediate medical assistance for further treatment, observation and support.

| | |
|---|---|
| Eye Contact: | Flush eyes with running cold water for several minutes. |
| Skin Contact: | Wash skin thoroughly with soap and water. Remove contaminated clothing. Burns caused by contact with hot material should be cooled immediately by drenching with cold water. The material may then be removed under medical supervision. |
| Inhalation: | Move patient to fresh air; keep warm and at rest. Loosen clothing. |

## SECTION 6 - CONTROL AND PROTECTIVE MEASURES

| | |
|---|---|
| Respiratory Protection: | Normally not required at ambient temperature. Self-contained apparatus during emergencies |
| Protective Gloves: | Impervious, heat resistant. |
| Eye Protection: | Splash-proof goggles meeting ANSI Z87.1 - 1989. |
| VENTILATION TO BE USED Mechanical: | Cross ventilation |
| Other Protective Clothing and Equipment: | Clothing based on Impervious, anti-static materials, eye baths, fire extinguishers, safety showers. |
| Hygienic Work Practices: | **Wash hands thoroughly after use. Dispose of contaminated clothing.** |

## SECTION 7 - PRECAUTIONS FOR SAFE HANDLING AND USE/LEAK PROCEDURES

| | |
|---|---|
| Steps to be Taken if Material is Spilled or Released: | Wear protective gear. Collect with non-sparking tools and place in leak-proof containers for disposal. Prevent spills from reaching sewers and open bodies of water. |
| Waste Disposal Methods: | Dispose of in accordance with current local, state and federal regulations. |
| Precautions to be Taken in Handling and Storage: | Storage must be restricted to cool, dry areas meeting OSHA standards. Maximum storage temperature 77°F (25°C) |
| Other Precautions and/or Special Hazards: | None |
| NFPA Rating: | Health: 2 Flammability: 0 Reactivity: 0 Special: Not Applicable |

## SECTION 8 - SHIPPING INFORMATION

| | |
|---|---|
| Proper DOT Shipping Name: | Not Regulated |
| DOT Hazard Class: | Not Regulated |
| Reportable Quantity (RQ): | None |
| Label: | None required |
| UN No: | Not Applicable |
| UN Class: | Not Applicable |
| Packaging Group: | Not Applicable |
| NMFTA Item: | 4620 |
| Class: | 55 |
| Authorized Container: | 27.5 lb. (12.5 kg) fiberboard box |

| | |
|---|---|
| Prepared by: | Technical Director |
| Date: | 10/94 |
| Supersedes: | 03/94 |

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PRO Chemical & Dye®
126 Shove Street - Fall River, MA 02724
orders - 1-800-2-BUY-DYE
technical support - 508-676-3838
email - promail@prochemical.com
www.prochemical.com



# Material Safety Data Sheet

# Paraffin Wax

## *1. Chemical Product Identification*

Product Name: Paraffin Wax
Product Code: SP-173
Generic Name: Paraffin Wax
INCI Name: Paraffin
Chemical Family: Mineral Wax

Emergency Telephone Numbers:
800-255-3924 ChemTel. (United States)
+ 1 01 813-248-0585 (Outside the United States)

Health Hazards: None anticipated

Physical Hazards: This material may burn but will not ignite readily. Keep away from all sources of ignition.

| | |
|---|---|
| * Physical Form: Solid -- Slab or Pastille Form | NFPA Hazard Class: |
| * Appearance: White | Health: 0 (Least) |
| * Odor: None to slight - characteristic | Flammability: 1 (Slight) |
| | Reactivity: 0 (Least) |

## *2. Composition/Information on Ingredients*

Hazardous Components: None

| Other Components | 100% Volume | Exposure Guideline Limits | Agency | Type |
|---|---|---|---|---|
| CAS #8002-74-2 | | -------None Known-------- | | |

**Potential Health Effects:**

**Eye:** Solid material is not expected to be an eye irritant; however, contact with molten wax may cause thermal burns. Vapors from molten wax may cause watering of the eyes.

**Skin**: Solid material is not expected to be a skin irritant; however, skin contact with molten wax may cause thermal burns. No harmful effects from skin absorption are expected.

**Inhalation (Breathing):** Vapors emitted from molten wax are expected to have a low degree of irritation by inhalation.

**Ingestion (Swallowing)**: No harmful effects expected

**Signs and Symptoms:** Effects of overexposure may include irritation of the nose and throat

**Cancer:** No data available

**Target Organs:** No data available

**Developmental:** No data available

**Pre-Existing Medical Conditions**: None known

***4. First Aid Measures***

**Eye:** If irritation or redness develops from exposure to fumes generated during hot-melt processing operations, move victim away from exposure and into fresh air. Flush eyes with clean water. If irritation or redness persists, seek medical attention. For contact with the molten material, gently open eyelids and flush affected eye(s) with cold water. Seek immediate medical attention.

**Skin:** For contact with molten material, leave material on skin and flush or immerse affected area(s), using cold water. Seek medical attention.

**Inhalation (Breathing):** If respiratory symptoms develop from exposure to fumes emitted by the molten material, move victim away from source of exposure and into fresh air. If symptoms persist, seek medical attention. If victim is not breathing, immediately begin artificial respiration. If breathing difficulties develop, oxygen should be administered by qualified personnel. Seek immediate medical attention.

**Ingestion (Swallowing):** First aid is not normally required for the solid material; however, if molten material is swallowed, seek immediate medical attention.

**Note to Physicians**: None

## *5. Fire-fighting Measures*

**Flammable Properties:**
**Flash Point:** 400 Degrees F (COC) Minimum
**OSHA Flammability Class**: Not regulated
**LEL/UEL:** No data
**Auto ignition Temperature**: No data
**Burn Rate (solids):** No data

**Unusual Fire & Explosion Hazards:** This material may burn, but will not ignite readily.

**Extinguishing Media**: Dry chemical, foam, water, sand, or earth is recommended.

**Fire-fighting Instructions**: Emergency responders in the danger area should wear bunker gear and self-contained breathing apparatus for fires beyond the incipient state (29CFR 1910.156). In addition, wear other appropriate protective equipment as conditions warrant (see Section 8). Isolate danger area, keep unauthorized personnel out. Contain spill if it can be done with minimal risk. Move undamaged containers from danger area if it can be done with minimal risk. With water, cool equipment exposed to fire if it can be done with minimal risk.

## 6. Accidental Release Measures

This material may burn but will not ignite readily. Keep all sources of ignition away from spill/release. Stay upwind and away from spill. Isolate danger area and keep unauthorized personnel out. Contain spill if it can be done with minimal risk. Wear appropriate protective equipment, including respiratory protection, as conditions warrant (see Section 8). Prevent spilled material from entering sewers, storm drains, other unauthorized treatment drainage systems, and natural waterways. Notify fire authorities and appropriate federal, state, and local agencies. Cleanup under expert supervision is advised. Minimize dust generation. Sweep up and package appropriately for disposal.

## *7. Handling and Storage*

**Handling:** Wash thoroughly after handling. Do not wear contaminated clothing or shoes. Use good personal hygiene practice. "Empty" containers retain residue (liquid and/or vapor) and may be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury or death. All containers should be disposed of in an environmentally-safe manner and in accordance with governmental regulations. Before working on or in tanks which contain or have contained this material, refer to Occupational Safety and Health Administration Regulations, ANSI Z49.1 and other governmental and industrial references pertaining to cleaning, repairing, welding, or other contemplated operations.

**Storage:** Keep container(s) tightly closed. Use and store this material in cool, dry, well-ventilated areas away from heat and all sources of ignition. Store only in approved containers. Keep away from any incompatible material (see Section 10). Protect container(s) against physical damage.

## *8. Exposure Controls/Personal Protection*

**Personal Protective Equipment (PPE):**

**Respiratory:** No respiratory protection is required when working with the solid material. If airborne concentrations of wax fumes, generated from molten wax, are expected, a NIOSH/MSHA approved air purifying respirator with a dust/mist/fume filter may be used. Protection provided by air purifying respirators is limited (see manufacturer's respirator selection guide). Use a positive pressure air supplied respirator if there is potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection. A respiratory protection program that meets OSHA's 29 CFR 1910.34 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

**Skin:** Not normally required for solid material. The use of thermally-resistant gloves is recommended when there is potential for exposure to molten wax.

**Eye/Face:** Approved eye protection to safeguard against potential eye contact, irritation, or injury is recommended.

**Other Protective Equipment:** A source of clean water should be available in the work area for flushing eyes and skin. Impervious clothing should be worn as needed.

## *9. Physical and Chemical Properties*

**Note:** Unless otherwise stated, values are determined at 20 Degrees C (68 Degrees F) and 760 mm Hg (1 atm).

**Flash Point**: 400 Degrees F Minimum
**Flammable/Explosive Limits (%):** No data
**Auto ignition Temperature**: No data
**Burn Rate (solids only)**: No data
**Appearance:** White
**Physical State**: Solid -- Pastille Form
**Odor:** None to slight - characteristic
**Vapor Pressure (mm Hg):** No data
**Vapor Density (air+1):** No data
**Boiling Point**: >650 Deg. F/343 Deg. C
**Melting Point**: 138 - 144 Deg. F/58.9-62.2 Deg. C
**Solubility in Water**: Negligible
**Specific Gravity**: Approximately 0.96
**Percent Volatile**: Negligible
**Bulk Density**: Approximately 7 pounds per gallon

## *10. Stability and Reactivity*

**Chemical Stability**: Stable under normal conditions of storage and handling.

**Conditions to Avoid**: Avoid all possible sources of ignition (see Sections 5 and 7).

**Incompatible Materials**: Avoid contact with strong oxidizing agents.

**Hazardous Decomposition Products**: Combustion can yield major amounts of oxides of carbon and minor amounts of oxides of sulfur and nitrogen.

**Hazardous Polymerization**: Will not occur.

### *11. Toxicological Information*

No definitive information available on carcinogenicity, mutagenicity, target organs or developmental toxicity.

### *12. Disposal Considerations*

This material, if discarded as produced, is not a RCRA "listed" or "characteristic" hazardous waste. Use which results in chemical or physical change or contamination may subject it to hazardous waste regulations. Along with properly characterizing all waste materials, consult state and local regulations regarding the proper disposal of this material.

### *13. Transport Information*

**Hazard Class or Division**: Not classified as hazardous

### *14. Regulatory Information*

This material contains the following chemicals subject to the reporting requirements of SARA 313 and 40 CFR 372:

---None---

**WARNING:**

This material contains the following chemicals which are known to the State of California to cause cancer, birth defects or other reproductive harm, and are subject to the requirements of California Proposition 65

CA Health & Safety Code Section 25249.5)

---None Known---

This material has not been identified as a carcinogen by NTP, IARC, or OSHA

EPA (CERCLA) Reportable Quantity: ---None---

### *15. Documentary Information*

Issue Date: 11/24/2010

Product Code: SP-173 Previous Product Code: SP-173

### *16. Disclaimer of Expressed and Implied Warranties*

The information in this document is believed to be correct as of the date issued.

**HOWEVER, NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY IS EXPRESSED OR IS TO BE IMPLIED REGARDING THE ACCURACY OR COMPLETENESS OF THIS INFORMATION, THE RESULTS TO BE OBTAINED FROM THE USE OF THIS INFORMATION OR THE PRODUCT, THE SAFETY OF THIS PRODUCT, OR THE HAZARDS RELATED TO ITS USE.**

This information and product are furnished on the condition that the person receiving them shall make his own determination as to the suitability of the product for his particular purpose and on the condition that he assumes the risk of his use thereof.

# Material Safety Data Sheet

## Radnor Carbon Arc Electrodes

## Section 1. Chemical product and company identification

**Common names** : **Carbon Arc Electrodes; Gouging Electrodes**
**Trade name** : Graphite, Copper-coated Electrodes
**Supplier** : Radnor Products, PO Box 6675, Radnor, PA 19087

**In case of emergency** : (866) 734-3438

## Section 2. Hazards identification

**Physical state** : Solid (Rod)
**Emergency overview** : WARNING

CANCER HAZARD
CONTAINS MATERIAL WHICH CAN CAUSE CANCER.
CONTAINS MATERIAL WHICH CAUSES DAMAGE TO THE FOLLOWING ORGANS: KIDNEYS, LUNGS, LIVER, CARDIOVASCULAR SYSTEM, RESPIRATORY TRACT, SKIN, EYE, LENS OR CORNEA.

Avoid breathing dusts. This product contains a component which, in powdered form, may cause respiratory tract and eye irritation; however, since this component is bounded to the core metal, the risk of inhalation of is negligible, as is any possible cancer hazard associated with this material.

**Routes of entry** : Dermal contact; Eye contact; Inhalation; Ingestion.

**Potential acute health effects**

**Eyes** : Dust particules or fumes may cause eye irritation.

**Skin** : No known significant effects or critical hazards.

**Inhalation** : May cause respiratory tract irritation.

**Ingestion** : No known significant effects or critical hazards.

**Potential chronic health effects** : Carcinogenic effects: Classified 1 (Known to be human carcinogens.) by NTP, + (Proven.) by NIOSH [Silica crystalline, quartz]. Classified A2 (Suspected for humans.) by ACGIH, 2A (Probable for human.) by IARC [Silica crystalline, quartz].
Mutagenic effects: Not available
Teratogenic effects: Not available

**Medical conditions aggravated by over-exposure** : Repeated or prolonged exposure to the substance can produce target organ damage. Prolonged or repeated contact may cause eye irritation.

**See toxicological information (section 11)**

## Section 3. Composition, Information on Ingredients

| | CAS number | % by weight |
|---|---|---|
| **United States** | | |
| Graphite, synthetic | 7440-44-0 | 30 - 60 |
| Copper | 7440-50-8 | 10 - 30 |
| Silica crystalline, quartz | 14808-60-7 | 0.5 - 1 |
| **Canada** | | |
| Graphite, synthetic | 7440-44-0 | 30 - 60 |
| Copper | 7440-50-8 | 10 - 30 |
| Silica crystalline, quartz | 14808-60-7 | 0.5 - 1 |

**Mexico**

| | | | Classification | | | | | |
|---|---|---|---|---|---|---|---|---|
| | UN number | IDLH | H | F | R | Special | | |
| Graphite, synthetic | UN1361 | - | 1 | 2 | 0 | | 7440-44-0 | 30 - 60 |
| Copper | Not regulated | 100 mg/m$^3$ | 0 | 0 | 0 | | 7440-50-8 | 10 - 30 |
| Silica crystalline, quartz | Not regulated | 50 mg/m$^3$ | 2 | 0 | 0 | | 14808-60-7 | 0.5 - 1 |

This material is classified hazardous under OSHA regulations in the United States, the WHMIS Controlled Product Regulation in Canada and the NOM-018-STPS-2000 in Mexico.

See Sections 8, 11 and 14 for details.

## Section 4. First aid measures

**Eye contact** : Check for and remove any contact lenses. In case of contact with eyes, rinse immediately with plenty of water. Get medical attention if symptoms occur.

**Skin contact** : Wash with soap and water. Get medical attention if symptoms occur.

**Inhalation** : If inhaled, remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms appear.

**Ingestion** : Do not induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention if symptoms appear.

**Notes to physician** : No specific antidote. Medical staff must contact Poison Control Center.

## Section 5. Fire fighting measures

**Flammability of the product** : Non-flammable

**Fire-fighting media and instructions** : Use an extinguishing agent suitable for the surrounding fire.

Welding arcs and sparks can ignite combustibles. Refer to ANSI Z49.1 “SAFETY IN WELDING AND CUTTING” published by the American Welding Society for fire prevention and protection information during welding.

**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** : Immediately contact emergency personnel. Keep unnecessary personnel away. Use suitable protective equipment.

**Environmental precautions** : Avoid dispersal of spilled material, runoff and contact with soil, waterways, drains and sewers.

**Methods for cleaning up** : If emergency personnel are unavailable, vacuum or carefully scoop up spilled material and place in an appropriate container for disposal by incineration. Avoid creating dusty conditions and prevent wind dispersal.

## Section 7. Handling and storage

**Handling** : Wash thoroughly after handling.

**Storage** : Keep container tightly closed. Keep container in a cool, well-ventilated area.

## Section 8. Exposure controls, personal protection

**Engineering controls** : Use process enclosures, local exhaust ventilation or other engineering controls to keep 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. If dust is generated and ventilation is inadequate, use NIOSH certified respirator that will protect against dust/mist.

**Personal protection**

**Eyes** : Wear helmet or use a face shield with the appropriate filter lens. Provide protective screens and flash goggles, if necessary to shield others. Consult ANSI Z49.1



**Respiratory** : A NIOSH approved respirator should be worn when airborne dust and fume concentrations exceed the applicable limits for Tungsten, Lanthane or other welding materials. A NIOSH approved fume respirator when welding in confines spaces. All appropriate requirements set forth in 29 CFR 1910.134 should be met. Under extreme exposure conditions when airborne concentrations may be above the protection factor of an air-purifying respirator, use a positive-pressure, air-supplied respirator. Appropriate standards for use of respiratory protection (such as 29 CFR 1910.134 and Z49.1) should be consulted.



**Hands** : Leather gloves



**Skin/Body** : Head, hand and body protection to prevent injury from arc radiation, sparks and electrical shock must be worn. Consult ASNI STD Z49.1



**Personal protection in case of a large spill** : Safety glasses, goggles or face shield. Impervious gloves. Full suit. Boots. Wear NIOSH-approved self-contained breathing apparatus or equivalent and full protective gear.

| Product name | Exposure limits |
|---|---|
| **United States** | |
| Graphite, synthetic | **ACGIH (United States).**<br>TWA: 10 mg/m³ 8 hour(s). Form: Nuisance particulates |
| Copper | **ACGIH TLV (United States, 1/2005).**<br>TWA: 1 mg/m³ 8 hour(s). Form: All forms<br>TWA: 0,2 mg/m³ 8 hour(s). Form: Fume<br>**NIOSH REL (United States, 12/2001).**<br>TWA: 1 mg/m³ 10 hour(s). Form: Dusts and mists<br>**OSHA PEL (United States, 8/1997).**<br>TWA: 150 µg/m³ 8 hour(s). Form: All forms |
| Silica crystalline, quartz | **ACGIH TLV (United States, 1/2005).**<br>TWA: 0,05 mg/m³ 8 hour(s). Form: Respirable fraction<br>**NIOSH REL (United States, 12/2001).**<br>TWA: 0,05 mg/m³ 10 hour(s). Form: All forms<br>**OSHA PEL 1989 (United States, 3/1989).**<br>TWA: 0,1 mg/m³ 8 hour(s). Form: Respirable dust |
| **Canada** | |
| Graphite, synthetic | **ACGIH TLV (United States).**<br>TWA: 10 mg/m³ 8 hour(s). Form: Nuisance particulates |
| Copper | **ACGIH TLV (United States, 1/2005).**<br>TWA: 1 mg/m³ 8 hour(s). Form: All forms<br>TWA: 0,2 mg/m³ 8 hour(s). Form: Fume |
| Silica crystalline, quartz | **ACGIH TLV (United States, 1/2005).**<br>TWA: 0,05 mg/m³ 8 hour(s). Form: Respirable fraction |
| **Mexico** | |
| Graphite, synthetic | **NOM-010-STPS (Mexico, 9/2000).**<br>CPT: 10 mg/m³ 8 hour(s). Form: All forms<br>CPT: 2 mg/m³ 8 hour(s). Form: Powder |
| Copper | **NOM-010-STPS (Mexico, 9/2000).**<br>CCT: 2 mg/m³ 15 minute(s). Form: Powder and dust<br>CCT: 2 mg/m³ 15 minute(s). Form: Dust<br>CPT: 1 mg/m³ 8 hour(s). Form: Powder and dust<br>CPT: 0,2 mg/m³ 8 hour(s). Form: Dust |
| Silica crystalline, quartz | **NOM-010-STPS (Mexico, 9/2000).**<br>CPT: 0,1 mg/m³ 8 hour(s). Form: All forms |

**Consult local authorities for acceptable exposure limits.**

## Section 9. Physical and chemical properties

**Physical state** : Solid (Rod)

**Color** : Black

**Odor** : Odorless

**Melting/freezing point** : Weighted average: 1112.71°C (2034.9°F)

**Specific gravity** : Weighted average: 1.93 (Water = 1)

**Vapor pressure** : The highest known value is 0.1 kPa (1 mm Hg) (at 20°C) (Copper).

**Dispersibility properties** : Not dispersible in cold water, hot water.

**Solubility** : Insoluble in cold water, hot water.

## Section 10. Stability and reactivity

**Stability and reactivity** : The product is stable.

**Incompatibility with various substances** : Incompatible with some strong acids.

**Hazardous polymerization** : Will not occur.

## Section 11. Toxicological information

**Acute Effects**

**Eyes** : Dust particules or fumes may cause eye irritation.

**Skin** : No known significant effects or critical hazards.

**Inhalation** : May cause respiratory tract irritation.

**Ingestion** : No known significant effects or critical hazards.

**Potential chronic health effects** : Carcinogenic effects: Classified 1 (Known to be human carcinogens.) by NTP, + (Proven.) by NIOSH [Silica crystalline, quartz]. Classified A2 (Suspected for humans.) by ACGIH, 2A (Probable for human.) by IARC [Silica crystalline, quartz].
Mutagenic effects: Not available
Teratogenic effects: Not available

**Target organs** : Contains material which causes damage to the following organs: kidneys, lungs, liver, cardiovascular system, upper respiratory tract, skin, eye, lens or cornea.

**Special remarks on other toxic effects on humans** : Not available

## Section 12. Ecological information

**Products of degradation** : These products are carbon oxides. Some metallic oxides.

## Section 13. Disposal considerations

**Waste disposal** : The generation of waste should be avoided or minimized wherever possible. Avoid dispersal of spilled material, runoff and contact with soil, waterways, drains and sewers. 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 and local authority requirements.

**Consult your local or regional authorities.**

# Section 14. Transport information

**Classification**

**Mexico/TDG/DOT/ IMDG/ IATA :** Not regulated

**NAERG** : Not applicable

**Label**

Not applicable

**Additional information**

Not applicable

**DOT**

**Marine pollutant**

Marine pollutant (P)

# Section 15. Regulatory information

**United States**

**HCS Classification** : Target organ effects

**U.S. Federal regulations** : TSCA : All components listed.
SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: Graphite, natural.; Graphite, synthetic; Copper
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: Graphite, natural.: Immediate (acute) health hazard; Graphite, synthetic: Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard; Copper: Immediate (acute) health hazard
Clean Water Act (CWA) 307: Copper
Clean Water Act (CWA) 311: No products were found.
Clean Air Act (CAA) 112 accidental release prevention: No products were found.
Clean Air Act (CAA) 112 regulated flammable substances: No products were found.
Clean Air Act (CAA) 112 regulated toxic substances: No products were found.

**SARA 313**

| | Product name | CAS number | Concentration |
|---|---|---|---|
| **Form R - Reporting requirements** : | Copper | 7440-50-8 | 10 - 30 |
| **Supplier notification** : | Copper | 7440-50-8 | 10 - 30 |

SARA 313 notifications must not be detached from the MSDS and any copying and redistribution of the MSDS shall include copying and redistribution of the notice attached to copies of the MSDS subsequently redistributed.

**State regulations** : Pennsylvania RTK: Graphite, natural: (generic environmental hazard); Copper: (environmental hazard, generic environmental hazard)
Massachusetts RTK: Graphite, natural; Copper
New Jersey: Silica crystalline, quartz; Copper

**WARNING:** This product contains a chemical known to the State of California to cause cancer.

| Ingredient name | Cancer | Reproductive | No significant risk level | Maximum acceptable dosage level |
|---|---|---|---|---|
| Silica crystalline, quartz | Yes | No | No | No |

**Canada**

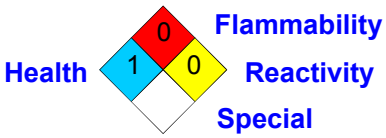
**WHMIS (Canada)** : Class D-2A: Material causing other toxic effects (Very toxic).



DSL : All components listed.

**Mexico**

**Classification** :




**International regulations**

**International lists** : All components listed are listed on major international inventories or exempted from being listed in Australia (AICS), Europe (EINECS/ELINCS), Korea (TCCL), Japan (METI/MOL), Philippines (RA6969).

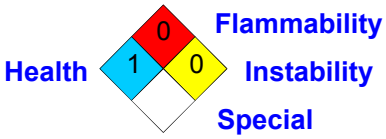
## Section 16. Other information

**Label requirements** : CANCER HAZARD
CONTAINS MATERIAL WHICH CAN CAUSE CANCER.
CONTAINS MATERIAL WHICH CAUSES DAMAGE TO THE FOLLOWING ORGANS: KIDNEYS, LUNGS, LIVER, CARDIOVASCULAR SYSTEM, RESPIRATORY TRACT, SKIN, EYE, LENS OR CORNEA.

**Hazardous Material Information System (U.S.A.)** :

| | | |
|---|---|---|
| Health | * | 1 |
| Fire hazard | | 0 |
| Reactivity | | 0 |
| Personal protection | | C |

**National Fire Protection Association (U.S.A.)** :




**References** : ANSI Z400.1, MSDS Standard, 2004. - Manufacturer's Material Safety Data Sheet. - 29CFR Part1910.1200 OSHA MSDS Requirements. - 49CFR Table List of Hazardous Materials, UN#, Proper Shipping Names, PG. - Canada Gazette Part II, Vol. 122, No. 2. Registration SOR/88-64, 31 December 1987. Hazardous Products Act "Ingredient Disclosure List" - Canadian Transport of Dangerous Goods, Regulations and Schedules, Clear Language version 2005. - Official Mexican Standards NOM-018-STPS-2000 and NOM-004-SCT2-1994.

**Date of issue** : 12/31/2006

**Version** : 1

**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.**

LINCOLN® ELECTRIC

| | | | |
|---|---|---|---|
| Date: | 8/20/07 | MSDS No.: | US-M290 |
| Trade Name: | Jet-LH 78 MR | | |
| Sizes: | All | | |
| Supersedes: | 12/14/01 | | |

# MATERIAL SAFETY DATA SHEET

## For Welding Consumables and Related Products

Conforms to Hazard Communication Standard 29CFR 1910.1200 Rev. October 1988

## SECTION I - IDENTIFICATION

**Manufacturer/ Supplier:** The Lincoln Electric Company
22801 St. Clair Avenue
Cleveland, OH 44117-1199
(216) 481-8100

**Product Type:** Covered Electrode

**Classification:** AWS E7018H4R

## SECTION II - HAZARDOUS MATERIAL (1)

**IMPORTANT!**

This section covers the materials from which this product is manufactured. The fumes and gases produced during welding with the normal use of this product are covered by Section V; see it for industrial hygiene information.
CAS Number shown is representative for the ingredients listed. All ingredients listed may not be present in all sizes.
(1) The term "hazardous" in "Hazardous Materials" should be interpreted as a term required and defined in the Hazards Communication Standard and does not necessarily imply the existence of any hazard. All materials are listed on the TSCA inventory.

| Ingredients: | CAS No. | Wt.% | TLV mg/m$^3$ | PEL mg/m$^3$ |
|---|---|---|---|---|
| Iron | 7439-89-6 | 10 | 10* | 10* |
| Limestone and/or calcium carbonate | 1317-65-3 | 10 | 10 | 15 |
| Fluorides (as F) | 7789-75-5 | 5 | 2.5 | 2.5 |
| Titanium dioxides | 13463-67-7 | < 5 | 10 | 15 |
| Silicates and other binders | 1344-09-8 | < 5 | 10* | 10* |
| Manganese and/or manganese alloys and compounds (as Mn)***** | 7439-96-5 | < 5 | 0.2 | 5 (c) |
| Silicon and/or silicon alloys and compounds (as Si) | 7440-21-3 | 1 | 10* | 10* |
| Quartz | 14808-60-7 | < 0.5 | #0.05** | #0.1** |
| Aluminum oxide and/or Bauxite | 1344-28-1 | < 0.5 | 10 | 15 |
| Zinc and/or zinc oxides***** | 1314-13-2 | < 0.5 | 5(d) | 5(d) |
| Iron oxides | 65996-74-9 | < 0.5 | 5 | 10 |
| Mineral silicates | 1332-58-7 | < 0.5 | 5** | 5** |
| Vanadium alloys (as V) | 7440-62-2 | < 0.5 | .05(@) | .05(@) |
| Lithium compounds (as Li) | 554-13-2 | < 0.5 | 10* | 10* |
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| Carbon steel core wire | 7439-89-6 | 60 | 10* | 10* |
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**Supplemental Information:** (*) Not listed. Nuisance value maximum is 10 milligrams per cubic meter. PEL value for iron oxide is 10 milligrams per cubic meter. TLV value for iron oxide is 5 milligrams per cubic meter.

(**) As respirable dust.

(*****) Subject to the reporting requirements of Sections 311, 312, and 313 of the Emergency Planning and Community Right-to-Know Act of 1986 and of 40CFR 370 and 372.

(d) Values are for zinc oxide fume. The ACGIH TLV has a STEL (Short Term Exposure Limit) of 10 milligrams per cubic meter.

(c) Value is for manganese fume. Present PEL is 5 milligrams per cubic meter (ceiling value). Values proposed by OSHA in 1989 were 1.0 milligrams per cubic meter TWA and 3.0 milligrams per cubic meter STEL (Short Term Exposure Limit).

(#) Crystalline silica (quartz) is on the IARC (International Agency for Research on Cancer) and NTP (National Toxicology Program) lists as posing a carcinogenic risk to humans.

(@) As $V_2 0_5$ fume or dust.

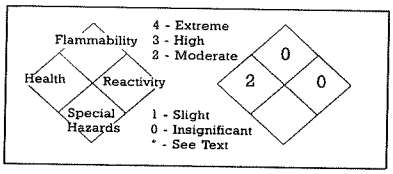
## SECTION III - HAZARD DATA

Non Flammable; Welding arc and sparks can ignite combustibles and flammable products. See Z49.1 referenced in Section VI. Product is inert, no special handling or spill procedures required. Not regulated by DOT.



(CONTINUED ON SIDE TWO)

| | |
|---|---|
| Product: | Jet-LH 78 MR |
| Date: | 8/20/07 |




# SECTION IV - HEALTH HAZARD DATA

**Threshold Limit Value:** The ACGIH recommended general limit for Welding Fume NOS - (Not Otherwise Specified) is 5 mg/m$^3$. ACGIH-1999 preface states that the TLV-TWA should be used as guides in the control of health hazards and should not be used as fine lines between safe and dangerous concentrations. See Section V for specific fume constituents which may modify this TLV. Threshold Limit Values are figures published by the American Conference of Government Industrial Hygienists. Units are milligrams per cubic meter of air.

**Effects of Overexposure:** Electric arc welding may create one or more of the following health hazards: Fumes and Gases can be dangerous to your health. Common entry is by inhalation. Other possible routes are skin contact and ingestion.

Short-term (acute) overexposure to welding fumes may result in discomfort such as metal fume fever, dizziness, nausea, or dryness or irritation of nose, throat, or eyes. May aggravate pre-existing respiratory problems (e.g. asthma, emphysema). Exposure to extremely high levels of fluorides can cause abdominal pain, diarrhea, muscular weakness, and convulsions. In extreme cases it can cause loss of consciousness and death.

Long-term (chronic) overexposure to welding fumes can lead to siderosis (iron deposits in lung) and may affect pulmonary function. Manganese overexposure can affect the central nervous system, resulting in impaired speech and movement. Bronchitis and some lung fibrosis have been reported. Repeated exposure to fluorides may cause excessive calcification of the bone and calcification of ligaments of the ribs, pelvis and spinal column. May cause skin rash. Overexposure to crystalline silica present in any dust from this flux can cause severe lung damage (silicosis). Silicosis is a form of disabling pulmonary fibrosis which can be progressive and may lead to death. Crystalline silica is on the IARC (International Agency for Research on Cancer) and NTP (National Toxicology Program) list as posing a cancer risk to humans. WARNING: This product, when used for welding or cutting, produces fumes or gases which contain chemicals known to the State of California to cause birth defects and, in some cases, cancer. (California Health & Safety Code Section 25249.5 et seq.)

Arc Rays can injure eyes and burn skin. *Skin cancer has been reported.*

Electric Shock can kill. If welding must be performed in damp locations or with wet clothing, on metal structures or when in cramped positions such as sitting, kneeling or lying, or if there is a high risk of unavoidable or accidental contact with workpiece, use the following equipment: Semiautomatic DC Welder, DC Manual (Stick) Welder, or AC Welder with Reduced Voltage Control.

Emergency and First Aid Procedures: Call for medical aid. Employ first aid techniques recommended by the American Red Cross. IF BREATHING IS DIFFICULT give oxygen. IF NOT BREATHING employ CPR (Cardiopulmonary Resuscitation) techniques. IN CASE OF ELECTRICAL SHOCK, turn off power and follow recommended treatment. In all cases call a physician.

# SECTION V - REACTIVITY DATA

**Hazardous Decomposition Products:** Welding fumes and gases cannot be classified simply. The composition and quantity of both are dependent upon the metal being welded, the process, procedure and electrodes used.

Other conditions which also influence the composition and quantity of the fumes and gases to which workers may be exposed include: coatings on the metal being welded (such as paint, plating, or galvanizing), the number of welders and the volume of the worker area, the quality and amount of ventilation, the position of the welder's head with respect to the fume plume, as well as the presence of contaminants in the atmosphere (such as chlorinated hydrocarbon vapors from cleaning and degreasing activities.)

When the electrode is consumed, the fume and gas decomposition products generated are different in percent and form from the ingredients listed in Section II. Decomposition products of normal operation include those originating from the volatilization, reaction, or oxidation of the materials shown in Section II, plus those from the base metal and coating, etc., as noted above.

Reasonably expected fume constituents of this product would include: Primarily iron oxide and fluorides; secondarily complex oxides of manganese, potassium, silicon, sodium and zinc.

Maximum fume exposure guideline for this product (based on manganese content) is 4.0 milligrams per cubic meter.

Gaseous reaction products may include carbon monoxide and carbon dioxide. Ozone and nitrogen oxides may be formed by the radiation from the arc.

Determine the composition and quantity of fumes and gases to which workers are exposed by taking an air sample from inside the welder's helmet if worn or in the worker's breathing zone. Improve ventilation if exposures are not below limits. See ANSI/AWS F1.1, F1.2, F1.3 and F1.5, available from the American Welding Society, 550 N.W. LeJeune Road, Miami, FL 33126.

# SECTION VI AND VII
# CONTROL MEASURES AND PRECAUTIONS FOR SAFE HANDLING AND USE

Read and understand the manufacturer's instruction and the precautionary label on the product. Request Lincoln Safety Publication E205. See American National Standard Z49.1, "Safety In Welding, Cutting and Allied Processes" published by the American Welding Society, 550 N.W. LeJeune Road, Miami, FL, 33126 (both available for free download at http://www.lincolnelectric.com/community/safety/) and OSHA Publication 2206 (29CFR1910), U.S. Government Printing Office, Superintendent of Documents, P.O. Box 371954, Pittsburgh, PA 15250-7954 for more details on many of the following:

**Ventilation:** Use enough ventilation, local exhaust at the arc, or both to keep the fumes and gases from the worker's breathing zone and the general area. Train the welder to keep his head out of the fumes. *Keep exposure as low as possible.*

**Respiratory Protection:** Use respirable fume respirator or air supplied respirator when welding in confined space or general work area when local exhaust or ventilation does not keep exposure below TLV.

**Eye Protection:** Wear helmet or use face shield with filter lens shade number 12 or darker. Shield others by providing screens and flash goggles.

**Protective Clothing:** Wear hand, head, and body protection which help to prevent injury from radiation, sparks and electrical shock. See Z49.1. At a minimum this includes welder's gloves and a protective face shield, and may include arm protectors, aprons, hats, shoulder protection, as well as dark substantial clothing. Train the welder not to permit electrically live parts or electrodes to contact skin . . . or clothing or gloves if they are wet. Insulate from work and ground.

**Disposal Information:** Discard any product, residue, disposable container, or liner as ordinary waste in an environmentally acceptable manner according to Federal, State and Local Regulations unless otherwise noted. No applicable ecological information available.

LINCOLN® ELECTRIC

| | | | |
|---|---|---|---|
| Date: | 12/19/2007 | MSDS No.: | US-M1011M |
| Trade Name: | Murex 6011C | | |
| Sizes: | All | | |
| Supersedes: | 5/11/2001 | | |

# MATERIAL SAFETY DATA SHEET

## For Welding Consumables and Related Products

Conforms to Hazard Communication Standard 29CFR 1910.1200 Rev. October 1988

## SECTION I - IDENTIFICATION

**Manufacturer/ Supplier:** The Lincoln Electric Company
22801 St. Clair Avenue
Cleveland, OH 44117-1199
(216) 481-8100

**Product Type:** Covered Electrode

**Classification:** AWS: E6011

## SECTION II - HAZARDOUS MATERIAL (1)

**IMPORTANT!**

This section covers the materials from which this product is manufactured. The fumes and gases produced during welding with the normal use of this product are covered by Section V; see it for industrial hygiene information.
CAS Number shown is representative for the ingredients listed. All ingredients listed may not be present in all sizes.
(1) The term "hazardous" in "Hazardous Materials" should be interpreted as a term required and defined in the Hazards Communication Standard and does not necessarily imply the existence of any hazard. All materials are listed on the TSCA inventory.

| Ingredients: | CAS No. | Wt.% | TLV mg/m$^3$ | PEL mg/m$^3$ |
|---|---|---|---|---|
| Cellulose and other carbohydrates | 65996-61-4 | 5 | 10* | 10* |
| Silicates and other binders | 1344-09-8 | < 5 | 10* | 10* |
| Titanium dioxides | 13463-67-7 | < 5 | 10 | 15 |
| Magnesite | 1309-48-4 | < 5 | 10 | 15 |
| Manganese and/or manganese alloys and compounds (as Mn)***** | 7439-96-5 | 1 | 0.2 | 5 (c) |
| Quartz | 14808-60-7 | 0.5 | #0.05** | #0.1** |
| Limestone and/or calcium carbonate | 1317-65-3 | 0.5 | 10 | 15 |
| Iron | 7439-89-6 | < 0.5 | 10* | 10* |
| Alkali carbonates | 584-08-7 | < 0.5 | 10* | 10* |
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| Carbon steel core wire | 7439-89-6 | 80 | 10* | 10* |
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**Supplemental Information:**

(*) Not listed. Nuisance value maximum is 10 milligrams per cubic meter. PEL value for iron oxide is 10 milligrams per cubic meter. TLV value for iron oxide is 5 milligrams per cubic meter.

(**) As respirable dust.

(*****) Subject to the reporting requirements of Sections 311, 312, and 313 of the Emergency Planning and Community Right-to-Know Act of 1986 and of 40CFR 370 and 372.

(c) Value is for manganese fume. Present PEL is 5 milligrams per cubic meter (ceiling value). Values proposed by OSHA in 1989 were 1.0 milligrams per cubic meter TWA and 3.0 milligrams per cubic meter STEL (Short Term Exposure Limit).

(#) Crystalline silica (quartz) is on the IARC (International Agency for Research on Cancer) and NTP (National Toxicology Program) lists as posing a carcinogenic risk to humans.

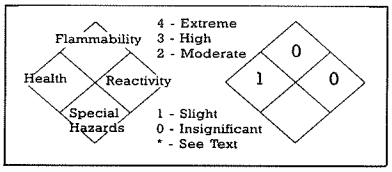
## SECTION III - HAZARD DATA

Non Flammable; Welding arc and sparks can ignite combustibles and flammable products. See Z49.1 referenced in Section VI. Product is inert, no special handling or spill procedures required. Not regulated by DOT.



(CONTINUED ON SIDE TWO)

| | |
|---|---|
| Product: | Murex 6011C |
| Date: | 12/19/2007 |




# SECTION IV - HEALTH HAZARD DATA

Threshold Limit Value: **The ACGIH recommended general limit for Welding Fume NOS - (Not Otherwise Specified) is 5 mg/m$^3$. ACGIH-1999 preface states that the TLV-TWA should be used as guides in the control of health hazards and should not be used as fine lines between safe and dangerous concentrations. See Section V for specific fume constituents which may modify this TLV. Threshold Limit Values are figures published by the American Conference of Government Industrial Hygienists. Units are milligrams per cubic meter of air.**

**Effects of Overexposure: Electric arc welding may create one or more of the following health hazards:**
**Fumes and Gases can be dangerous to your health. Common entry is by inhalation. Other possible routes are skin contact and ingestion.**

**Short-term (acute) overexposure to welding fumes may result in discomfort such as metal fume fever, dizziness, nausea, or dryness or irritation of nose, throat, or eyes. May aggravate pre-existing respiratory problems (e.g. asthma, emphysema).**

**Long-term (chronic) overexposure to welding fumes can lead to siderosis (iron deposits in lung) and may affect pulmonary function. Manganese overexposure can affect the central nervous system, resulting in impaired speech and movement. Bronchitis and some lung fibrosis have been reported. Overexposure to crystalline silica present in any dust from this product can cause severe lung damage (silicosis). Silicosis is a form of disabling pulmonary fibrosis which can be progressive and may lead to death. Crystalline silica is on the IARC (International Agency for Research on Cancer) and NTP (National Toxicology Program) lists as posing a cancer risk to humans. WARNING: This product, when used for welding or cutting, produces fumes or gases which contain chemicals known to the State of California to cause birth defects and, in some cases, cancer. (California Health & Safety Code Section 25249.5 et seq.)**

**Arc Rays can injure eyes and burn skin.** ***Skin cancer has been reported.***
**Electric Shock can kill. If welding must be performed in damp locations or with wet clothing, on metal structures or when in cramped positions such as sitting, kneeling or lying, or if there is a high risk of unavoidable or accidental contact with work piece, use the following equipment: Semiautomatic DC Welder, DC Manual (Stick) Welder, or AC Welder with Reduced Voltage Control.**

Emergency and First Aid Procedures: Call for medical aid. Employ first aid techniques recommended by the American Red Cross.
IF BREATHING IS DIFFICULT give oxygen. IF NOT BREATHING employ CPR (Cardiopulmonary Resuscitation) techniques.
IN CASE OF ELECTRICAL SHOCK, turn off power and follow recommended treatment. In all cases call a physician.

# SECTION V - REACTIVITY DATA

**Hazardous Decomposition Products: Welding fumes and gases cannot be classified simply. The composition and quantity of both are dependent upon the metal being welded, the process, procedure and electrodes used.**

**Other conditions which also influence the composition and quantity of the fumes and gases to which workers may be exposed include: coatings on the metal being welded (such as paint, plating, or galvanizing), the number of welders and the volume of the worker area, the quality and amount of ventilation, the position of the welder's head with respect to the fume plume, as well as the presence of contaminants in the atmosphere (such as chlorinated hydrocarbon vapors from cleaning and degreasing activities.)**

**When the electrode is consumed, the fume and gas decomposition products generated are different in percent and form from the ingredients listed in Section II. Decomposition products of normal operation include those originating from the volatilization, reaction, or oxidation of the materials shown in Section II, plus those from the base metal and coating, etc., as noted above.**

**Reasonably expected fume constituents of this product would include: Primarily iron oxide; secondarily complex oxides of manganese, potassium, silicon and sodium.**

**Maximum fume exposure guideline for this product (based on manganese content) is 4.0 milligrams per cubic meter.**

**Gaseous reaction products may include carbon monoxide and carbon dioxide. Ozone and nitrogen oxides may be formed by the radiation from the arc.**

**Determine the composition and quantity of fumes and gases to which workers are exposed by taking an air sample from inside the welder's helmet if worn or in the worker's breathing zone. Improve ventilation if exposures are not below limits. See ANSI/AWS F1.1, F1.2, F1.3 and F1.5, available from the American Welding** Society, 550 N.W. LeJeune Road, Miami, FL 33126.

# SECTION VI AND VII
# CONTROL MEASURES AND PRECAUTIONS FOR SAFE HANDLING AND USE

**Read and understand the manufacturer's instruction and the precautionary label on the product. Request Lincoln Safety Publication E205. See American National Standard Z49.1, "Safety In Welding, Cutting and Allied Processes" published by the American Welding Society, 550 N.W. LeJeune Road, Miami, FL, 33126 (both available for free download at http://www.lincolnelectric.com/community/safety/) and OSHA Publication 2206 (29CFR1910), U.S. Government Printing Office, Superintendent of Documents, P.O. Box 371954, Pittsburgh, PA 15250-7954 for more details on many of the following:**

**Ventilation: Use enough ventilation, local exhaust at the arc, or both to keep the fumes and gases from the worker's breathing zone and the general area. Train the welder to keep his head out of the fumes.** ***Keep exposure as low as possible.***

**Respiratory Protection: Use respirable fume respirator or air supplied respirator when welding in confined space or general work area when local exhaust or ventilation does not keep exposure below TLV.**

**Eye Protection: Wear helmet or use face shield with filter lens shade number 12 or darker. Shield others by providing screens and flash goggles.**

**Protective Clothing: Wear hand, head, and body protection which help to prevent injury from radiation, sparks and electrical shock. See Z49.1. At a minimum this includes welder's gloves and a protective face shield, and may include arm protectors, aprons, hats, shoulder protection, as well as dark substantial clothing. Train the welder not to permit electrically live parts or electrodes to contact skin . . . or clothing or gloves if they are wet. Insulate from work and ground.**

**Disposal Information: Discard any product, residue, disposable container, or liner as ordinary waste in an environmentally acceptable manner according to Federal, State and Local Regulations unless otherwise noted. No applicable ecological information available.**