

METHYLENE CHLORIDE  
M47008\_NA\_US

Revision Date: May 09 2008

**OxyChem**<sup>®</sup>



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## MATERIAL SAFETY DATA SHEET

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### 1. PRODUCT AND COMPANY INFORMATION

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**Occidental Chemical Corporation**

**5005 LBJ Freeway, Suite 2200**

**P.O. Box 809050**

**Dallas, Texas 75380-9050**

**24 HOUR EMERGENCY TELEPHONE:**

**1-800-733-3665 or 1-972-404-3228 (U.S.);**

**32.3.575.55.55 (Europe);**

**1800-033-111 (Australia)**

**TO REQUEST AN MSDS:**

**MSDS@oxy.com or 1-972-404-3245**

**CUSTOMER SERVICE:**

**1-800-752-5151 or 1-972-404-3700**

**MSDS NUMBER:** M47008

**SUBSTANCE:** METHYLENE CHLORIDE

**TRADE NAMES:**

METHYLENE CHLORIDE, TECHNICAL GRADE; METHYLENE CHLORIDE, DECAFFEINATION GRADE; METHYLENE CHLORIDE, AEROSOL GRADE; METHYLENE CHLORIDE, DEGREASING GRADE; METHYLENE CHLORIDE, SPECIAL GRADE

**SYNONYMS:**

Dichloromethane

**PRODUCT USE:** paint remover formulations, vapor depressant in aerosol applications, general cleaning solvent, foam blowing agent

**PRODUCT DESCRIPTION:** Note - The Special, Aerosol, and Degreasing Grades contain small amounts of a propylene oxide stabilizer. The Technical and Decaffeination Grades do not.

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## 2. HAZARDS IDENTIFICATION

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**OSHA REGULATORY STATUS:** This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

**GHS CLASSIFICATION:**  
Acute toxicity, Category 4

**GHS SYMBOL:**



**GHS SIGNAL WORD:** WARNING

**GHS HAZARD STATEMENT:**  
Harmful if swallowed  
May be harmful if inhaled

**EMERGENCY OVERVIEW:**

**COLOR:** colorless

**PHYSICAL FORM:** liquid

**ODOR:** mildly sweet, chloroform-like odor

**SIGNAL WORD:** WARNING

**MAJOR HEALTH HAZARDS:** HARMFUL IF SWALLOWED. MAY BE IRRITATING TO RESPIRATORY TRACT, SKIN AND EYES. MAY CAUSE CARDIAC AND CENTRAL NERVOUS SYSTEM EFFECTS. CHEMICAL ASPHYXIANT. MAY CAUSE LIVER DAMAGE. MAY CAUSE CANCER BASED ON ANIMAL DATA.

**PRECAUTIONARY STATEMENTS:** Do not breathe vapor or mist. Do not get in eyes, on skin, or on clothing. Do not taste or swallow. Keep container tightly closed. Wash thoroughly after handling. Use only with adequate ventilation.

**POTENTIAL HEALTH EFFECTS:**

**INHALATION:**

May cause upper respiratory tract irritation and central nervous system depression with symptoms such as confusion, lightheadedness, nausea, vomiting, headache, and fatigue. Causes formation of carbon monoxide in blood which may affect the cardiovascular system and central nervous system. Continued exposure may cause unconsciousness and even death.

**SKIN CONTACT:**

May cause effects ranging from mild irritation to severe pain, and possibly burns, depending on the intensity of contact. Skin absorption may occur.

**EYE CONTACT:**

Vapors may cause eye irritation. Contact may cause tearing, redness, a stinging or burning feeling, swelling,

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and blurred vision.

**INGESTION:**

May cause nausea or vomiting. If vomiting results in aspiration, chemical pneumonia could occur. Absorption through the gastrointestinal tract may produce central nervous system depression.

**TARGET ORGANS:** blood, central nervous system, liver, skin, cardiovascular system, eyes

**CHRONIC EFFECTS:**

May cause liver damage. May cause cancer based on animal data.

**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:** heart or cardiovascular disorders, kidney disorders, liver disorders, nervous system disorders, respiratory system (including asthma and other breathing disorders), skin disorders and allergies

**ADDITIONAL DATA:** Alcohol may enhance the toxic effects. May cross the placenta. May be excreted in breast milk. Concurrent exposure to carbon monoxide, smoking, or physical activity may increase the level of carboxyhemoglobin in the blood resulting in additive effects.

**CARCINOGEN STATUS:**

**OSHA:** Yes

**NTP:** Yes

**IARC:** Yes

See Section 11: TOXICOLOGICAL INFORMATION

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### 3. COMPOSITION/INFORMATION ON INGREDIENTS

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**COMPONENT:** DICHLOROMETHANE

**CAS NUMBER:** 75-09-2

**PERCENTAGE:** 99.97-100

**COMPONENT:** PROPYLENE OXIDE (SPECIAL, AEROSOL, AND DEGREASING GRADES ONLY)

**CAS NUMBER:** 75-56-9

**PERCENTAGE:** Proprietary

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### 4. FIRST AID MEASURES

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**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. If respiration or pulse has stopped, have a trained person administer Basic Life Support (Cardio-Pulmonary Resuscitation/Automatic External Defibrillator) and CALL FOR EMERGENCY SERVICES IMMEDIATELY.

**SKIN CONTACT:** Immediately flush contaminated areas with water. Remove contaminated clothing, jewelry, and shoes immediately. Wash contaminated areas with soap and water. Thoroughly clean and dry contaminated clothing before reuse. Discard contaminated leather goods. GET MEDICAL ATTENTION IMMEDIATELY.

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**EYE CONTACT:** Immediately flush eyes with a directed stream of water for at least 15 minutes, forcibly holding eyelids apart to ensure complete irrigation of all eye and lid tissues. Washing eyes within several seconds is essential to achieve maximum effectiveness. GET MEDICAL ATTENTION IMMEDIATELY.

**INGESTION:** Never give anything by mouth to an unconscious or convulsive person. If swallowed, do not induce vomiting. If vomiting occurs spontaneously, keep airway clear. Do not give fluids. GET MEDICAL ATTENTION IMMEDIATELY.

**NOTE TO PHYSICIAN:** This material is an aspiration hazard. Risk of aspiration must be weighed against possible toxicity of the material (see ingestion) when determining whether to induce emesis or to perform gastric lavage. This material sensitizes the heart to the effects of sympathomimetic amines. Epinephrine and other sympathomimetic drugs may initiate cardiac arrhythmias in individuals exposed to this material. This material is metabolized to carbon monoxide. Consequently, elevations in carboxyhemoglobin as high as 50% have been reported, and levels may continue to rise for several hours after exposure has ceased. Data in experimental animals suggest there is a narrow margin between concentrations causing anesthesia and death.

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## 5. FIRE FIGHTING MEASURES

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**FIRE AND EXPLOSION HAZARDS:** Slight fire hazard.

**EXTINGUISHING MEDIA:** Use foam, dry chemical, CO<sub>2</sub>, or water spray.

**FIRE FIGHTING:** Wear NIOSH approved positive-pressure self-contained breathing apparatus. Concentrated vapors may be ignited by high intensity energy source. Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Flood with fine water spray. Do not scatter spilled material with high-pressure water streams. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas. Keep water runoff out of water supplies and sewers (see Section 6 of the MSDS).

**SENSITIVITY TO MECHANICAL IMPACT:** Not sensitive

**SENSITIVITY TO STATIC DISCHARGE:** Not sensitive

**FLASH POINT:** none, TCC

**LOWER FLAMMABLE LIMIT:** 12% @ 100 C

**UPPER FLAMMABLE LIMIT:** 19% @ 100 C

**AUTOIGNITION:** 1033 F (556.1 C)

**HAZARDOUS COMBUSTION PRODUCTS:**

Thermal decomposition or combustion products: hydrogen chloride, chlorine, phosgene, oxides of carbon

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## 6. ACCIDENTAL RELEASE MEASURES

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### **OCCUPATIONAL RELEASE:**

Evacuation of surrounding area may be necessary for large spills. Shut off ventilation system if needed. Wear appropriate personal protective equipment recommended in Section 8 of the MSDS. Completely contain spilled material with dikes, sandbags, etc. Most vapors are heavier than air and will spread along ground and collect in low or confined areas (drains, basements, tanks). Ventilate closed spaces before entering. Stop leak if possible without personal risk. Remove contaminated soil or collect with appropriate absorbent and place into suitable container. Keep container tightly closed. Dispose properly. Liquid material may be removed with a properly rated vacuum truck. Keep out of water supplies, sewers and soil. Avoid discharge into drains, surface water or groundwater. Releases should be reported, if required, to appropriate agencies. Notify Local Emergency Planning Committee and State Emergency Response Commission for release greater than or equal to RQ (U.S. SARA Section 304). If release occurs in the U.S. and is reportable under CERCLA Section 103, notify the National Response Center at (800)424-8802 (USA) or (202)426-2675 (USA).

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## **7. HANDLING AND STORAGE**

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**STORAGE:** Store and handle in accordance with all current regulations and standards. Keep container tightly closed and properly labeled. Store in a cool, dry place. Store in a well-ventilated area. Prevent water or moist air from entering storage tanks or containers. Do not enter confined spaces without following proper confined space entry procedures. Do not store in aluminum container or use aluminum fittings or transfer lines. Protect from sunlight. Do not reuse drum without recycling or reconditioning in accordance with any applicable federal, state or local laws. Do not use cutting or welding torches, open flames or electric arcs on empty or full containers. Keep separated from incompatible substances (see Section 10 of the MSDS).

**HANDLING:** Most vapors are heavier than air and will spread along ground and collect in low or confined areas (drains, basements, tanks). Avoid breathing vapor or mist. Avoid contact with eyes, skin and clothing. Do not taste or swallow. Wash thoroughly after handling. When using, do not eat, drink or smoke.

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## **8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

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### **EXPOSURE LIMITS:**

#### **DICHLOROMETHANE:**

#### **DICHLOROMETHANE (METHYLENE CHLORIDE):**

25 ppm OSHA TWA PEL

125 ppm OSHA STEL 15 minute(s)

12.5 ppm OSHA action level

50 ppm ACGIH TWA

#### **PROPYLENE OXIDE (SPECIAL, AEROSOL, AND DEGREASING GRADES ONLY):**

#### **PROPYLENE OXIDE:**

100 ppm (240 mg/m<sup>3</sup>) OSHA TWA

20 ppm (50 mg/m<sup>3</sup>) OSHA TWA (vacated by 58 FR 35338, June 30, 1993)

2 ppm ACGIH TWA (sensitizer)

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**BIOLOGICAL LIMIT VALUES:**  
**DICHLOROMETHANE (METHYLENE CHLORIDE):**

BEI®: 0.3 mg/L

DETERMINANT: Dichloromethane in urine

SAMPLING TIME: End of shift

**VENTILATION:** Provide local exhaust or process enclosure ventilation system. Ensure compliance with applicable exposure limits. Monitoring must be performed regularly in accordance with 29 CFR 1910.1052(d) to determine exposure level(s).

**EYE PROTECTION:** Wear safety glasses with side shields. Wear chemical safety goggles with a faceshield to protect against skin and eye contact when appropriate. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

**CLOTHING:** Wear appropriate chemical resistant clothing.

**GLOVES:** Wear appropriate chemical resistant gloves.

**PROTECTIVE MATERIAL TYPES:** Trelchem®, Tychem®, Viton®, polyvinyl alcohol (PVA)

**IMMEDIATELY DANGEROUS TO LIFE OR HEALTH:** 2300 ppm (methylene chloride)

**RESPIRATOR:** The minimum requirements for respiratory protection for methylene chloride appear in 29 CFR 1910.1052 (f).

Where concentrations are above the IDLH, or are unknown, or during spills and/or emergencies, use any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained breathing apparatus operated in pressure-demand or other positive-pressure mode.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

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**PHYSICAL STATE:** liquid

**APPEARANCE:** clear

**COLOR:** colorless

**ODOR:** mildly sweet, chloroform-like odor

**MOLECULAR WEIGHT:** 84.94

**MOLECULAR FORMULA:** CH<sub>2</sub>Cl<sub>2</sub>

**BOILING POINT:** 104 F (40 C)

**FREEZING POINT:** -139 F (-95 C)

**FLASH POINT:** none, TCC

**LOWER FLAMMABLE LIMIT:** 12% @ 100 C

**UPPER FLAMMABLE LIMIT:** 19% @ 100 C

**AUTOIGNITION:** 1033 F (556.1 C)

**VAPOR PRESSURE:** 350 mmHg @ 20 C

**VAPOR DENSITY (air=1):** 2.9

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**SPECIFIC GRAVITY (water=1):** 1.31-1.32 @ 25 C  
**WATER SOLUBILITY:** 1.32% @ 25 C  
**PH:** Not applicable  
**VOLATILITY:** 100%  
**ODOR THRESHOLD:** 200-300 ppm (causes olfactory fatigue)  
**EVAPORATION RATE:** 0.7 (ether=1)  
**COEFFICIENT OF WATER/OIL DISTRIBUTION:** log Kow = 1.25

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## 10. STABILITY AND REACTIVITY

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**REACTIVITY:** Stable at normal temperatures and pressure.

**CONDITIONS TO AVOID:** Avoid heat, flames, sparks and other sources of ignition. Containers may rupture or explode if exposed to heat. Avoid contact with incompatible substances and conditions due to generation of phosgene and other toxic and irritating substances.

**INCOMPATIBILITIES:** bases, oxygen, sodium, potassium, strong oxidizing materials, reactive metals

**HAZARDOUS DECOMPOSITION:**

Thermal decomposition or combustion products: hydrogen chloride, chlorine, phosgene, oxides of carbon

**POLYMERIZATION:** Will not polymerize.

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## 11. TOXICOLOGICAL INFORMATION

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**METHYLENE CHLORIDE:**

**IRRITATION DATA:** 810 mg/24 hour(s) skin-rabbit severe; 100 mg/24 hour(s) skin-rabbit moderate; 162 mg eyes-rabbit moderate; 10 mg eyes-rabbit mild; 500 mg/24 hour(s) eyes-rabbit mild

**TOXICITY DATA:** 52 mg/L/4 hour(s) inhalation-rat LC50; 985-1600 mg/kg oral-rat LD50

**MUTAGENIC DATA:** Positive results have been observed in the Ames test. In mammalian systems, responses have generally been negative. **IMMUNOTOXICITY:** A study found there was no evidence of harm to the immune system of laboratory animals or reduced ability to combat disease. **NEUROTOXICITY:** Tests in rats indicate no significant neurotoxic effects after exposure to concentrations up to 2,000 ppm for 90 days. No neurotoxic effects have been observed in humans at typical occupational exposure levels. **DEVELOPMENTAL/REPRODUCTIVE:** No significant developmental effects were observed in female rats and mice exposed to 1,250 ppm during gestation. A similar result was observed in rats exposed to 4,500 ppm before and during gestation. A two-generation inhalation study showed no adverse reproductive effects in rats exposed to as much as 1,500 ppm for 14 weeks.

**CARCINOGEN STATUS:** Methylene chloride is carcinogenic in experimental animals at a relatively high dose, by route(s) of administration, at site(s), of histologic type(s), or by mechanism(s) that are not considered relevant to worker exposure. Available epidemiological studies do not confirm an increased risk of cancer in humans. Available evidence suggests that this material is not likely to cause cancer in humans except under uncommon or unlikely routes or levels of exposure.

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## 12. ECOLOGICAL INFORMATION

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### **ECOTOXICITY DATA:**

**FISH TOXICITY:** 310 mg/L 96 hour(s) LC50 (Static) Fathead minnow; 220 mg/L 96 hour(s) LC50 (Static) Bluegill sunfish

**INVERTEBRATE TOXICITY:** 256 mg/L 96 hour(s) LC50 Mysid Shrimp

### **FATE AND TRANSPORT:**

**BIODEGRADATION:** Biodegradation may occur in groundwater, but will be very slow compared with evaporation.

**PERSISTENCE:** AIR: This material released to the atmosphere will degrade by reaction with hydroxyl radicals with a half-life of several months. It is not subject to direct photooxidation. SOIL: On land is expected to evaporate rapidly into the atmosphere due to its high vapor pressure. It is poorly adsorbed to soil and can leach into the groundwater. Calculated Adsorption Coefficient (log KOC) is 1. WATER: This material is subject to rapid evaporation, with estimated evaporative half-lives ranging from 3 to 5.6 hours under moderate mixing condition. This material has a negligible rate of hydrolysis.

**BIOCONCENTRATION:** Bioconcentration potential in aquatic organisms is low with BCF of 2.

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## 13. DISPOSAL CONSIDERATIONS

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Reuse or reprocess if possible. Keep out of water supplies, sewers and soil. Dispose in accordance with all applicable regulations. Subject to disposal regulations: U.S. EPA 40 CFR 262. Hazardous Waste Number(s): U080. May be subject to disposal regulations: D002. D029. F002.

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## 14. TRANSPORT INFORMATION

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### **U.S. DOT 49 CFR 172.101:**

**PROPER SHIPPING NAME:** Dichloromethane

**ID NUMBER:** UN1593

**HAZARD CLASS OR DIVISION:** 6.1

**PACKING GROUP:** III

**LABELING REQUIREMENTS:** 6.1

**DOT HAZARDOUS SUBSTANCE(S):**

Dichloromethane 1000 lb(s) (454 kg(s))

Propylene oxide 100 lb(s) (45.4 kg(s))

### **CANADIAN TRANSPORTATION OF DANGEROUS GOODS:**

**SHIPPING NAME:** Dichloromethane

**UN NUMBER:** UN1593



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**CLASS:** 6.1  
**PACKING GROUP/RISK GROUP:** III

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## 15. REGULATORY INFORMATION

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### **U.S. REGULATIONS:**

**CERCLA SECTIONS 102a/103 HAZARDOUS SUBSTANCES (40 CFR 302.4):**

**Dichloromethane (Methylene chloride):** 1000 LBS RQ

**1,1,2-Trichloroethane:** 100 LBS RQ

**VINYLDINE CHLORIDE:** 100 LBS RQ

**Propylene Oxide (SPECIAL, AEROSOL, AND DEGREASING GRADES ONLY):** 100 lbs RQ

**SARA TITLE III SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355.30):**

**Propylene Oxide (SPECIAL, AEROSOL, AND DEGREASING GRADES ONLY):** 10000/lbs lbs TPQ

**SARA TITLE III SARA SECTIONS 311/312 HAZARDOUS CATEGORIES (40 CFR 370.21):**

ACUTE: Yes

CHRONIC: Yes

FIRE: No

REACTIVE: No

SUDDEN RELEASE: No

**SARA TITLE III SECTION 313 (40 CFR 372.65):**

**Dichloromethane (Methylene chloride)**

**Propylene Oxide (SPECIAL, AEROSOL, AND DEGREASING GRADES ONLY)**

This product contains a toxic chemical or chemicals subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR 372. Refer to Section 3.

**OSHA PROCESS SAFETY (29CFR1910.119):** Not regulated.

**OTHER U.S. REGULATIONS:** OSHA Specifically Regulated Substances (29 CFR 1910.1052).

### **STATE REGULATIONS:**

**California Proposition 65:**

Known to the state of California to cause the following:

**Dichloromethane (Methylene chloride)**

Cancer (Apr 01, 1988)

**1,1,2-Trichloroethane**

Cancer (Oct 01, 1990)

This product may contain contaminants known to the State of California to cause cancer or reproductive toxicity as listed under Proposition 65 State Drinking Water and Toxic Enforcement Act. For additional information, contact Customer Service.

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**NEW JERSEY WORKER AND COMMUNITY RIGHT TO KNOW:  
REPORTING REQUIREMENT:**

DICHLOROMETHANE 75-09-2 99.97-100%

**RIGHT TO KNOW HAZARDOUS SUBSTANCE LIST:**

DICHLOROMETHANE 75-09-2 99.97-100%

1,1,2-TRICHLOROETHANE 79-00-5 <10 ppm

VINYLDENE CHLORIDE 75-35-4 0-12.2 ppm

PROPYLENE OXIDE (SPECIAL, AEROSOL, AND DEGREASING GRADES ONLY) 75-56-9

Proprietary

**SPECIAL HEALTH HAZARD SUBSTANCE LIST:**

1,1,2-TRICHLOROETHANE 79-00-5 <10 ppm

VINYLDENE CHLORIDE 75-35-4 0-12.2 ppm

PROPYLENE OXIDE (SPECIAL, AEROSOL, AND DEGREASING GRADES ONLY) 75-56-9

Proprietary

**PENNSYLVANIA RIGHT TO KNOW:**

**REPORTING REQUIREMENT:**

DICHLOROMETHANE 75-09-2 99.97-100%

**HAZARDOUS SUBSTANCE LIST:**

DICHLOROMETHANE 75-09-2 99.97-100%

PROPYLENE OXIDE (SPECIAL, AEROSOL, AND DEGREASING GRADES ONLY) 75-56-9

Proprietary

**ENVIRONMENTAL HAZARDOUS SUBSTANCE LIST:**

DICHLOROMETHANE 75-09-2 99.97-100%

PROPYLENE OXIDE (SPECIAL, AEROSOL, AND DEGREASING GRADES ONLY) 75-56-9

Proprietary

**SPECIAL HAZARDOUS SUBSTANCE LIST:**

DICHLOROMETHANE 75-09-2 99.97-100%

PROPYLENE OXIDE (SPECIAL, AEROSOL, AND DEGREASING GRADES ONLY) 75-56-9

Proprietary

**CANADIAN REGULATIONS:**

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

**WHMIS CLASSIFICATION:** D1B, D2A, D2B.

**NATIONAL INVENTORY STATUS:**

**U.S. INVENTORY (TSCA):** Listed on inventory.

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**TSCA 12(b) EXPORT NOTIFICATION:** Not listed.

**CANADA INVENTORY (DSL/NDSL):** Listed on inventory.

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## 16. OTHER INFORMATION

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**NFPA RATINGS (SCALE 0-4):** HEALTH=2 FIRE=1 REACTIVITY=0

**HMIS RATINGS (SCALE 0-4):** HEALTH=2\* FLAMMABILITY=1 REACTIVITY=0

This information is intended solely for the use of individuals trained in the NFPA and/or HMIS systems. Rated using 2nd Edition HMIS Instructions.

### MSDS SUMMARY OF CHANGES

- 2. HAZARDS IDENTIFICATION
- 8. EXPOSURE CONTROLS, PERSONAL PROTECTION
- 11. TOXICOLOGICAL INFORMATION
- 15. REGULATORY INFORMATION

**Standard 29 CFR 1910.1200 requires that information be provided to employees regarding the hazards of chemicals by means of a hazard communication program including labeling, material safety data sheets, training and access to written records. We request that you, and it is your legal duty to, make all information in this Material Safety Data Sheet available to your employees.**

**IMPORTANT: The information presented herein, while not guaranteed, was prepared by competent technical personnel and is true and accurate to the best of our knowledge. NO WARRANTY OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE, OR WARRANTY OR GUARANTY OF ANY OTHER KIND, EXPRESS OR IMPLIED, IS MADE REGARDING PERFORMANCE, SUITABILITY, STABILITY OR OTHERWISE. The information included herein is not intended to be all-inclusive as to the appropriate manner and/or conditions of use, handling and/or storage. Factors pertaining to certain conditions of storage, handling, or use of this product may involve other or additional safety or performance considerations. While our technical personnel will be happy to respond to questions regarding safe handling and use procedures, safe handling and use remains the responsibility of the customer. No suggestions for use are intended to, and nothing herein shall be construed as a recommendation to, infringe any existing patents or violate any laws, rules, regulations or ordinances of any governmental entity.**