



# SAFETY DATA SHEET

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## METHYLENE CHLORIDE

SDS Revision Date: 7-31-2019

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### SECTION 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

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**Company Identification:** GreenChem Industries LLC  
222 Clematis St, #207  
West Palm Beach, FL 33401  
561-659-2236

**24 Hour Emergency Telephone Number:** ;  
CHEMTREC: 1-800-424-9300

**To Request an SDS:** info@greenchemindustries.com

**Customer Service:** 561-659-2236

**Product Identifier:** **METHYLENE CHLORIDE**

**Trade Name:** Methylene chloride, technical grade; Methylene chloride, decaffeination grade; Methylene chloride, aerosol grade; Methylene chloride, degreasing grade; Methylene chloride, special grade; Methylene Chloride Amyl Food Grade

**Synonyms:** Dichloromethane; Methylene Dichloride

**Uses Advised Against:** This chemical/product is not and cannot be distributed in commerce (as defined in TSCA section 3(5)) or processed (as defined in TSCA section 3(13)) for consumer paint or coating removal

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**Chemical Family:** Saturated aliphatic halogenated solvent

**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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## SECTION 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).

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### EMERGENCY OVERVIEW:

**Color:** Colorless  
**Physical State:** Liquid  
**Appearance:** Clear  
**Odor:** Mildly sweet odor, Chloroform-like odor

**Signal Word:** **DANGER**

**MAJOR HEALTH HAZARDS:** HARMFUL IF SWALLOWED. MAY BE HARMFUL IF SWALLOWED AND ENTERS AIRWAYS. CAUSES SKIN IRRITATION. CAUSES SERIOUS EYE IRRITATION. MAY CAUSE RESPIRATORY IRRITATION. MAY CAUSE DROWSINESS OR DIZZINESS. CAUSES DAMAGE TO CARDIOVASCULAR SYSTEM INCLUDING ELEVATED CARBOXYHEMOGLOBIN LEVELS. MAY CAUSE DAMAGE TO BLOOD AND LIVER THROUGH PROLONGED OR REPEATED EXPOSURES. SUSPECTED OF CAUSING CANCER.

**AQUATIC TOXICITY:** HARMFUL TO AQUATIC LIFE.

**PRECAUTIONARY STATEMENTS:** Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe mist, vapors, or spray. Wash skin and contaminated clothing thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear protective gloves, protective clothing, eye, and face protection. Avoid release to the environment. Store in a well-ventilated place. Keep container tightly closed. Store in a secure manner. Material that cannot be reused or chemically reprocessed should be disposed of in accordance with all applicable federal, state and local health and environmental regulations.

**ADDITIONAL HAZARD INFORMATION:** Exposure in an enclosed or poorly-ventilated area may be very harmful. Methylene chloride can be metabolized to carbon monoxide (CO), which is then very tightly bound to hemoglobin. This complex is called carboxyhemoglobin (COHb) and results in a reduction in the oxygen carrying capacity of the blood. This product may be absorbed through the skin, causing systemic effects.

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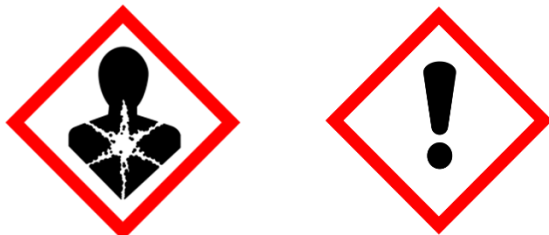
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## GHS CLASSIFICATION:

<b>GHS: CONTACT HAZARD - SKIN:</b>	Category 2 - Causes skin irritation
<b>GHS: CONTACT HAZARD - EYE:</b>	Category 2A - Causes serious eye irritation
<b>GHS: ACUTE TOXICITY - ORAL:</b>	Category 4 - Harmful if swallowed
<b>GHS: TARGET ORGAN TOXICITY (SINGLE EXPOSURE):</b>	Category 1 - Causes damage to cardiovascular system including elevated carboxyhemoglobin levels Category 3 - May cause drowsiness or dizziness Category 3 - May cause respiratory tract irritation
<b>GHS: TARGET ORGAN TOXICITY (REPEATED EXPOSURE):</b>	Category 2 - May cause damage to Blood and Hepatic System through prolonged or repeated exposures
<b>GHS: CARCINOGENICITY:</b>	Category 2 - Suspected of causing cancer

**UNKNOWN ACUTE TOXICITY:** Not applicable. 100% of this product consists of ingredient(s) of known acute toxicity.

**GHS SYMBOL:** Exclamation mark, Health hazard



**GHS SIGNAL WORD:** **DANGER**

## GHS HAZARD STATEMENTS:

### GHS - Health Hazard Statement(s)

- Harmful if swallowed
- Causes skin irritation
- Causes serious eye irritation
- May cause respiratory irritation
- May cause drowsiness or dizziness
- Suspected of causing cancer
- May cause damage to organs through prolonged or repeated exposure

### GHS - Precautionary Statement(s) - Prevention

- Obtain special instructions before use
- Do not handle until all safety precautions have been read and understood
- Do not breathe mist, vapors, or spray
- Rinse immediately contaminated clothing and skin with plenty of water before removing clothes
- Do not eat, drink or smoke when using this product
- Use only outdoors or in a well-ventilated area
- Wear eye protection, face protection, protective gloves, protective clothing

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## GHS - Precautionary Statement(s) - Response

- IF SWALLOWED: Immediately call a POISON CENTER OR LICENSED HEALTH CARE PROVIDER (LHCP)
- Rinse mouth
- Do NOT induce vomiting
- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
- If eye irritation persists: Get medical advice/attention
- IF ON SKIN: Wash with plenty of soap and water
- If skin irritation occurs: Get medical advice/attention
- Take off contaminated clothing and wash it before reuse
- IF exposed or concerned: Get medical advice/attention
- IF INHALED: Remove person to fresh air and keep at rest in a position comfortable for breathing
- IF INHALED: Call a POISON CENTER OR LICENSED HEALTH CARE PROVIDER (LHCP) if you feel unwell
- Get medical advice/attention if you feel unwell

## GHS - Precautionary Statement(s) - Storage

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

## GHS - Precautionary Statement(s) - Disposal

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

## Hazards Not Otherwise Classified (HNOC)

Exposure in an enclosed or poorly-ventilated area may be very harmful  
This material may be absorbed across the skin causing systemic effects

## Physical Hazards Not Otherwise Classified

- Not Classified

## Health Hazards Not Otherwise Classified

• Methylene chloride can be metabolized to carbon monoxide (CO), which is then very tightly bound to hemoglobin. This complex is called carboxyhemoglobin (COHb) and results in a reduction in the oxygen carrying capacity of the blood. This product may be absorbed through the skin, causing systemic effects

See Section 11: TOXICOLOGICAL INFORMATION

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## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

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Component	Percent [%]	CAS Number
Methylene chloride (Dichloromethane)	98.8 - 100	75-09-2
Propylene oxide	0 - 1.2	75-56-9

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## SECTION 4. FIRST AID MEASURES

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**INHALATION:** If inhalation of this material occurs and adverse effects result, move person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/physician. See Notes to Physician below and Section 11 for more information.

**SKIN CONTACT:** If on skin, wash with plenty of water. If skin irritation occurs, get medical advice/attention. Take off contaminated clothing and wash before reuse. Treat any skin irritation symptomatically.

**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 attention.

**INGESTION:** If swallowed, rinse mouth. Do NOT induce vomiting. Contact a poison center or doctor/physician if you feel unwell.

## **Most Important Symptoms/Effects (Acute and Delayed):**

### **Acute Symptoms/Effects:**

**Inhalation (Breathing):** Respiratory System Effects: Pulmonary irritation, cough, chest discomfort, shortness of breath, headache, euphoria, nausea and vomiting, respiratory irritation. Changes in heart rate, paresthesias, sleepiness and seizures are described. Heavy exposure can result in muscle weakness or hypotonia, syncope, stupor followed by loss of consciousness. Complications include cardiac abnormalities and elevations of carboxyhemoglobin. Coma with respiratory depression may result in death.

**Skin:** Skin Irritation. Skin exposure may cause intense burning sensation, mild redness and numbness. Severe burns may develop following prolonged exposures.

**Eye:** Eye Irritation. Mild eye irritation may occur when exposed to vapor. Splash of liquid in the eye can cause conjunctival irritation and burning pain. Prolonged contact can cause severe corneal burns.

**Ingestion (Swallowing):** Ingesting this material may cause nausea, vomiting, mucosal irritation with burning sensation. System effects include central nervous system depression, headache, syncope, seizures, and coma. Ingesting concentrated solutions of this material can cause corrosion of the GI tract and perforation. The minimum oral lethal dose is estimated at 0.5 to 5 ml/kg. Lesser amounts may cause significant toxicity.

### **Delayed Symptoms/Effects:**

- May cause cancer
- Repeated or prolonged exposure may cause blood and liver damage

**Interaction with Other Chemicals Which Enhance Toxicity:** May potentiate other agents that cause central nervous system (CNS) and respiratory system depression, such as alcohol, opiates.

**Medical Conditions Aggravated by Exposure:** May increase potential for cardiac arrhythmia. May increase carboxyhemoglobin levels. May worsen respiratory system disorders such as asthma and other breathing disorders. May worsen central nervous system disorders such as seizure disorders or impair central nervous system functions. May worsen ischemic heart disease.

**Protection of First-Aiders:** Protect against vapor/gas exposure. Protect against liquid contamination. Most cases of serious toxicity or death have been associated with stripping operations and or use in enclosed spaces.

**Notes to Physician:** Acute symptoms from low airborne levels are generally mild and self limiting following removal from exposure, and should require no specific treatment. The primary exposure route is inhalation. Symptomatic exposure should be treated with oxygen. The primary toxicity is central nervous system depression. May cause cardiac arrhythmias. Treatment with non-catecholamine agent is theoretically preferred. Treat seizures with

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benzodiazepines. Methylene chloride is metabolized to carbon monoxide. Carbon monoxide levels may increase after exposure has ceased. Treat following carbon monoxide recommendations. For ingestion, protect the airway and do not administer fluids or attempt to decontaminate due to the risk of vomiting and aspiration. Protect the airway. May dissolve some medical grade plastics. Systemic toxicity from skin absorption is unlikely. There is no antidote.

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## SECTION 5. FIRE-FIGHTING MEASURES

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**Fire Hazard:** Slight fire hazard. This material may burn, but does not readily ignite.

**Extinguishing Media:** Use foam, dry chemical, CO<sub>2</sub>, or water spray

**Fire Fighting:** Wear NIOSH approved positive-pressure self-contained breathing apparatus operated in pressure demand mode. Concentrated vapors may be ignited by high intensity 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).

Component	Immediately Dangerous to Life/ Health (IDLH)
Methylene chloride (Dichloromethane) 75-09-2	2300 ppm IDLH
Propylene oxide 75-56-9	400 ppm IDLH

**Hazardous Combustion Products:** Hydrogen chloride, Chlorine, Phosgene, Oxides of carbon

**Sensitivity to Mechanical Impact:** Not sensitive.

**Sensitivity to Static Discharge:** Not sensitive.

**Lower Flammability Level (air):** 12% @ 100°C

**Upper Flammability Level (air):** 19% @ 100°C

**Flash point:** None

**Auto-ignition Temperature:** 1033 °F (556.1 °C)

**Physical Hazards Not Otherwise Classified**

- Not Classified

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## SECTION 6. ACCIDENTAL RELEASE MEASURES

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### Personal Precautions:

Most vapors are heavier than air and will spread along ground and collect in low or confined areas (drains,

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basements, tanks). Do not breathe vapors, mist, or spray. Ventilate closed spaces before entering. Exposure in an enclosed or poorly-ventilated area may be very harmful. Keep unnecessary people away, isolate hazard area and deny entry. Evacuation of surrounding area may be necessary for large spills. Shut off ventilation system if needed. Do not get in eyes, on skin or on clothing. Wear appropriate personal protective equipment recommended in Section 8 of the SDS.

## **Environmental Precautions:**

Keep out of water supplies, sewers and soil. Avoid discharge into drains, surface water or groundwater. Releases should be reported, if required, to appropriate regulatory agencies.

## **Methods and Materials for Containment and Cleaning Up:**

Stop leak if possible without personal risk. Ventilate closed spaces before entering. Completely contain spilled materials with dikes, sandbags, etc. Remove contaminated soil or collect with appropriate absorbent and place into suitable container. Keep container tightly closed and properly labeled. Liquid material may be removed with a properly rated vacuum truck. Properly dispose of in accordance with all applicable regulations. See Section 13, Disposal considerations, for additional information.

## **Additional Disaster Prevention Measures:**

Potential Methylene Chloride exposures have special OSHA requirements as noted in CFR 1910.1052.

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## **SECTION 7. HANDLING AND STORAGE**

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### **Precautions for Safe Handling:**

Do not breathe gas, vapors, or spray mist. Most vapors are heavier than air and will spread along ground and collect in low or confined areas (drains, basements, tanks). Avoid contact with skin, eyes and clothing. Wear personal protective equipment as described in Exposure Controls/Personal Protection (Section 8) of the SDS. Wash thoroughly after handling. Do not taste or swallow. When using, do not eat, drink or smoke.

### **Safe Storage Conditions:**

Store and handle in accordance with all current regulations and standards. Keep container tightly closed and properly labeled. Store in a cool, dry area. Store in a well-ventilated area. Prevent water or moist air from entering storage tanks or containers. Do not enter confined spaces unless adequately ventilated. Do not store in aluminum container or use aluminum fittings or transfer lines. To minimize the decomposition of dichloromethane, storage containers should be galvanized or lined with a phenolic coating. 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 below or Section 10 of the Safety Data Sheet).

### **Incompatibilities/ Materials to Avoid:**

Aluminum, magnesium, zinc, and their alloys, Bases, Oxygen, Amines, Reactive metals, Sodium, Potassium, Strong oxidizing agents, Alkali metals

### **Physical Hazards Not Otherwise Classified**

- Not Classified

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

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## **REGULATORY EXPOSURE LIMIT(S):**

Listed below for the product components that have regulatory occupational exposure limits (OEL's) established. See 29 CFR 1910.1052 (OSHA's regulatory standard for Methylene Chloride) for additional requirements when 8-hour action level (12.5 ppm TWA) is exceeded.

Component	OSHA Final PEL TWA	OSHA Final PEL STEL	OSHA Final PEL Ceiling
Methylene chloride (Dichloromethane) 75-09-2	25 ppm	125 ppm	-----
Propylene oxide 75-56-9	100 ppm 240 mg/m <sup>3</sup>	-----	-----

**OEL: Occupational Exposure Limit; OSHA: United States Occupational Safety and Health Administration; PEL: Permissible Exposure Limit; TWA: Time Weighted Average; STEL: Short Term Exposure Limit**

## **NON-REGULATORY EXPOSURE LIMIT(S):**

Listed below are the product components that have advisory (non-regulatory) occupational exposure limits (OEL's) established.

Component	ACGIH TWA	ACGIH STEL	ACGIH Ceiling	Skin Absorption - ACGIH	OSHA TWA (Vacated)	OSHA STEL (Vacated)	OSHA Ceiling (Vacated)
Methylene chloride (Dichloromethane)	50 ppm	-----	-----	Not Listed	500 ppm	2000 ppm	1000 ppm
Propylene oxide	2 ppm	-----	-----		20 ppm 50 mg/m <sup>3</sup>	-----	-----

**- The Non-Regulatory United States Occupational Safety and Health Administration (OSHA) limits, if shown, are the Vacated 1989 PEL's (vacated by 58 FR 35338, June 30, 1993).**

- The American Conference of Governmental Industrial Hygienists (ACGIH) is a voluntary organization of professional industrial hygiene personnel in government or educational institutions in the United States. The ACGIH develops and publishes recommended occupational exposure limits each year called Threshold Limit Values (TLVs) for hundreds of chemicals, physical agents, and biological exposure indices.

Component	OXY REL 8 hr TWA	OXY REL STEL	OXY REL Ceiling
Methylene chloride (Dichloromethane) 75-09-2 ( 98.8 - 100 )	25 ppm	125 ppm	

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

## **PERSONAL PROTECTIVE EQUIPMENT:**

**Eye Protection:** Wear safety glasses with side-shields. Wear chemical safety goggles and/or a face-shield to protect against skin and eye contact when appropriate. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

**Skin and Body Protection:** Wear chemical resistant clothing and footwear to prevent skin contact.



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**Hand Protection:** Wear appropriate chemical resistant gloves. Consult a glove supplier for assistance in selecting an appropriate chemical resistant glove.

**Protective Material Types:**

TrelchemÒ, TychemÒ, VitonÒ, Polyvinyl alcohol (PVA)

**Respiratory Protection:** Respiratory protection requirements for methylene chloride are in 29 CFR 1910.1052(f). When concentrations are above the IDLH, or are unknown, or during spills and/or emergencies, use any supplied-air respirator that has a 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.

Component	Immediately Dangerous to Life/ Health (IDLH)
Methylene chloride (Dichloromethane) 75-09-2	2300 ppm IDLH
Propylene oxide 75-56-9	400 ppm IDLH

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Physical State:</b>	Liquid
<b>Appearance:</b>	Clear
<b>Color:</b>	Colorless
<b>Odor:</b>	Mildly sweet odor, Chloroform-like odor
<b>Odor Threshold [ppm]:</b>	200-300 ppm (causes olfactory fatigue).
<b>Molecular Weight:</b>	84.94
<b>Chemical Family:</b>	Saturated aliphatic halogenated solvent
<b>Boiling Point/Range:</b>	104 °F (40 °C)
<b>Freezing Point/Range:</b>	-139 °F (-95 °C).
<b>Melting Point/Range:</b>	-95 (°C)
<b>Vapor Pressure:</b>	350 mmHg @ 20°C and 435 mmHG @ 25°C
<b>Vapor Density (air=1):</b>	2.9
<b>Relative Density/Specific Gravity (water=1):</b>	1.31 - 1.32 @ 25°C
<b>Water Solubility:</b>	1.32% @ 25 C or 13,000 mg/l at 25 °C
<b>pH:</b>	Not applicable
<b>Volatility:</b>	100% by volume
<b>Evaporation Rate (ether=1):</b>	0.7
<b>Flash point:</b>	None
<b>Lower Flammability Level (air):</b>	12% @ 100°C
<b>Upper Flammability Level (air):</b>	19% @100°C
<b>Auto-ignition Temperature:</b>	1033 °F (556.1 °C)
<b>Viscosity:</b>	- 0.41 (cps) @ 77°F

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## SECTION 10. STABILITY AND REACTIVITY

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**Chemical Stability:** Stable at normal temperatures and pressures.

**Reactivity:** Reacts violently with active metals.

**Possibility of Hazardous Reactions:** Avoid heat, flames, sparks and other sources of ignition. Containers may rupture or explode if exposed to heat. Reacts violently with active metals. Avoid contact with incompatible substances and conditions due to generation of phosgene and other toxic and irritating substances.

**Conditions to Avoid:** (e.g., static discharge, shock, or vibration) - None known.

**Incompatibilities/ Materials to Avoid:** Aluminum, magnesium, zinc, and their alloys, Bases, Oxygen, Amines, Reactive metals, Sodium, Potassium, Strong oxidizing agents, Alkali metals.

**Hazardous Decomposition Products:** Hydrogen chloride, Chlorine, Phosgene, Oxides of Carbon

**Hazardous Polymerization:** Will not occur.

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## SECTION 11. TOXICOLOGICAL INFORMATION

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**IRRITATION DATA:** Methylene Chloride: 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:

#### PRODUCT TOXICITY DATA: METHYLENE CHLORIDE

<b><u>LD50 Oral:</u></b> 985 mg/kg (rat) mg/kg (Rat)	<b><u>LD50 Dermal:</u></b> > 2,000 mg/kg (Rat)	<b><u>LC50 Inhalation:</u></b> 76000 mg/m <sup>3</sup> (4 hr-Rat)
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Component	LD50 Oral:	LD50 Dermal:	LC50 Inhalation:
Methylene chloride (Dichloromethane) 75-09-2	1600 mg/kg (Rat)		53 mg/L (6 hr-Rat) 76000 mg/m <sup>3</sup> (4 hr-Rat)
Propylene oxide 75-56-9	520 mg/kg (Rat)	1244 mg/kg (Rabbit)	0.948 mg/L (4 hr-Rat)

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### POTENTIAL HEALTH EFFECTS:

**Eye contact:**

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

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<b>Skin contact:</b>	May cause effects ranging from mild irritation to severe pain, and possibly burns, depending on the intensity of contact. Skin absorption may occur.
<b>Inhalation:</b>	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.
<b>Ingestion:</b>	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.
<b>Chronic Effects:</b>	May cause liver damage. May cause cancer based on animal data.

## SIGNS AND SYMPTOMS OF EXPOSURE:

**Inhalation (Breathing):** Respiratory System Effects: Pulmonary irritation, cough, chest discomfort, shortness of breath, headache, euphoria, nausea and vomiting, respiratory irritation. Changes in heart rate, paresthesias, sleepiness and seizures are described. Heavy exposure can result in muscle weakness or hypotonia, syncope, stupor followed by loss of consciousness. Complications include cardiac abnormalities and elevations of carboxyhemoglobin. Coma with respiratory depression may result in death.

**Skin:** Skin Irritation. Skin exposure may cause intense burning sensation, mild redness and numbness. Severe burns may develop following prolonged exposures.

**Eye:** Eye Irritation. Mild eye irritation may occur when exposed to vapor. Splash of liquid in the eye can cause conjunctival irritation and burning pain. Prolonged contact can cause severe corneal burns.

**Ingestion (Swallowing):** Ingesting this material may cause nausea, vomiting, mucosal irritation with burning sensation. System effects include central nervous system depression, headache, syncope, seizures, and coma. Ingesting concentrated solutions of this material can cause corrosion of the GI tract and perforation. The minimum oral lethal dose is estimated at 0.5 to 5 ml/kg. Lesser amounts may cause significant toxicity.

## TOXICITY:

Dermal exposure results in absorption but at a slower rate than via the oral or inhalation routes of exposure.

## CHRONIC TOXICITY:

Liver effects have not been reported in humans, but liver changes have been observed in several long-term studies with laboratory animals. Inhalation of 500 to 3,500 ppm methylene chloride for two years produced only minimal, nonproliferative changes in the liver of Sprague Dawley rats (the no-observed-effect level was equal to 200 ppm) and no liver effects in hamsters. Nonproliferative changes were noted in rats in another study after exposure to 1,000 to 4,000 ppm. Liver enlargement has been observed in mice exposed to 2,000 and 4,000 ppm of methylene chloride for 11 days.

**Interaction with Other Chemicals Which Enhance Toxicity:** May potentiate other agents that cause central nervous system (CNS) and respiratory system depression, such as alcohol, opiates.

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## GHS HEALTH HAZARDS:

**GHS: ACUTE TOXICITY - ORAL:** Category 4 - Harmful if swallowed.

**GHS: CONTACT HAZARD - EYE:** Category 2A - Causes serious eye irritation

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**GHS: CONTACT HAZARD - SKIN:** Category 2 - Causes skin irritation.

**Skin Absorbent / Dermal Route:**

Yes.

**GHS: CARCINOGENICITY:**

Category 2 - Suspected of causing cancer.

**CARCINOGENICITY COMMENT:** 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.

**SPECIFIC TARGET ORGAN TOXICITY (Single Exposure):**

Category 1 - Causes damage to cardiovascular system including elevated carboxyhemoglobin levels

Category 3 - Narcotic Effects

Category 3 - Respiratory Tract Irritation

**SPECIFIC TARGET ORGAN TOXICITY (Repeated or Prolonged Exposure):**

Category 2 - Blood, Liver

**MUTAGENIC DATA:**

Not classified as a mutagen per GHS criteria. Positive results have been observed in the Ames test. In mammalian systems, responses have generally been negative.

**DEVELOPMENTAL TOXICITY:**

Not classified as a developmental or reproductive toxin per GHS criteria. May cross the placenta. May be excreted in breast milk. 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.

**IMMUNOTOXICITY:**

A study found there was no evidence of harm to the immune system of laboratory animals or reduced ability to combat disease.

**Health Hazards Not Otherwise Classified**

• Methylene chloride can be metabolized to carbon monoxide (CO), which is then very tightly bound to hemoglobin. This complex is called carboxyhemoglobin (COHb) and results in a reduction in the oxygen carrying capacity of the blood. This product may be absorbed through the skin, causing systemic effects

## SECTION 12. ECOLOGICAL INFORMATION

**ECOTOXICITY DATA:**

<u>Component</u>	<u>Freshwater Fish</u>	<u>Invertebrate Toxicity:</u>	<u>Algae Toxicity:</u>	<u>Other Toxicity:</u>
Methylene chloride	No data available	1532 - 1847 mg/L	500 mg/L (96 h -	No data available

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(Dichloromethane)		EC50 = 190 mg/L EC50	Pseudokirchneriella subcapitata) 500 mg/L (72 h - Pseudokirchneriella subcapitata)	
Propylene oxide	No data available	= 350 mg/L EC50	240 mg/L (96 h - Pseudokirchneriella subcapitata)	No data available

**Fish Toxicity:**

LC50 (Static) Fathead minnow = 310 mg/L (96 hr)(Static) Bluegill sunfish = 220 mg/L (96 hr)

**Invertebrate Toxicity:**

LC50 Mysid Shrimp = 256 mg/L 96 hour(s); 224 mg/L 48 hour(s) LC50 Daphnia Magna

## 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.

## SECTION 13. DISPOSAL CONSIDERATIONS

**Waste from material:**

Reuse or reprocess, if possible. Keep out of water supplies, sewers and soil. Dispose in accordance with all applicable regulations. May be subject to disposal regulations.

**Container Management:**

Dispose of container in accordance with applicable local, regional, national, and/or international regulations. Container rinsate must be disposed of in compliance with applicable regulations.

## SECTION 14. TRANSPORT INFORMATION

### LAND TRANSPORT

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## U.S. DOT 49 CFR 172.101:

UN NUMBER: UN1593  
PROPER SHIPPING NAME: Dichloromethane  
HAZARD CLASS/ DIVISION: 6.1  
PACKING GROUP: III  
LABELING REQUIREMENTS: 6.1

RQ (lbs): RQ 1,000 Lbs. (Dichloromethane)  
RQ 100 Lbs. (Propylene oxide)

## CANADIAN TRANSPORTATION OF DANGEROUS GOODS:

UN NUMBER: UN1593  
SHIPPING NAME: Dichloromethane  
CLASS OR DIVISION: 6.1  
PACKING/RISK GROUP: III  
LABELING REQUIREMENTS: 6.1

## MARITIME TRANSPORT (IMO / IMDG) Regulated

UN NUMBER: UN1593  
PROPER SHIPPING NAME: Dichloromethane  
HAZARD CLASS / DIVISION: 6.1  
Packing Group: III  
LABELING REQUIREMENTS: 6.1

## SECTION 15. REGULATORY INFORMATION

### U.S. REGULATIONS

#### OSHA REGULATORY STATUS:

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)

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

If a release is reportable under CERCLA section 103, notify the state emergency response commission and local emergency planning committee. In addition, notify the National Response Center at (800) 424-8802 or (202) 426-2675.

Component	U.S. DOT Hazardous Substances/ RQs	CERCLA Hazardous Substances / RQs	CERCLA Section 302 EHS EPCRA RQs	Section 302 Threshold Planning Quantity (TPQs)
Methylene chloride (Dichloromethane) 75-09-2	1000 lbs(RQ)	1000 lb(final RQ)	Not listed	Not Listed
Propylene oxide 75-56-9	100 lbs(RQ)	100 lb(final RQ)	100 lb(EPCRA RQ)	10000 lb TPQ

#### SARA EHS Chemical (40 CFR 355.30)

If a release is reportable under EPCRA, notify the state emergency response commission and local emergency planning committee. If the TPQ is met, facilities are subject to reporting requirements under EPCRA Sections 311

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and 312.

**EPCRA SECTIONS 311/312 HAZARD CATEGORIES (40 CFR 370.10):**

Acute Health Hazard, Chronic Health Hazard, Extremely Hazardous

**SARA HAZARD CATEGORIES ALIGNED WITH GHS (2018):**

Health Hazard - Carcinogen  
 Health Hazard - Acute Toxin  
 Health Hazard - Skin Corrosive / Irritant  
 Health Hazard - Eye Corrosive / Irritant  
 Health Hazard - Specific Target Organ Toxicity (STOT) Single Exposure (SE)  
 Health Hazard - Specific Target Organ Toxicity (STOT) Repeat Exposure (RE)  
 Health Hazard - Aspiration Hazard  
 Health Hazard - HNOC

**EPCRA SECTION 313 (40 CFR 372.65):**

The following chemicals are listed in 40 CFR 372.65 and may be subject to Community Right-to Know Reporting requirements

**EPA**

This chemical/product is not and cannot be distributed in commerce (as defined in TSCA section 3(5)) or processed (as defined in TSCA section 3(13)) for consumer paint or coating removal.

Component	SARA 313 - Emission Reporting	SARA 313 PBT
Methylene chloride (Dichloromethane)	0.1% (de minimis concentration)	Not Listed
Propylene oxide	0.1% (de minimis concentration)	Not Listed

Component	DHS - Security Issues	DHS-Sabotage Screening Threshold Qty.	DHS-Sabotage Min. Conc.	DHS-Theft Screening Threshold Qty.	DHS-Theft Min. Conc.	DHS-Release Screening Threshold Qty.	DHS-Release Min. Conc.
Propylene oxide 75-56-9	Release - Flammable					10000 lb STQ	1.0% Minimum Concentration

**OSHA SPECIFICALLY REGULATED SUBSTANCES:**

• OSHA 29 CFR 1910.1052 (Methylene chloride); The U.S. Department of Labor, Occupational Safety and Health Administration specifically regulates manufacturing, handling and processing of methylene chloride. Such regulations have been published at 29 CFR 1910.1052

**OSHA PROCESS SAFETY (PSM) (29 CFR 1910.119):**

Not regulated

Component	EPA RMP Toxic or Flammable TPQ	PSM - Highly Hazardous Substances	Flash Point
Propylene oxide	Toxic (10000 lb threshold quantity)		-37°C

**FDA:** This material has Generally Recognized As Safe (GRAS) status under specific U.S. Food and Drug Administration (FDA) regulations. Additional information is available from the Code of Federal Regulations which is accessible on the FDA's website. Only food grade product is guaranteed to be produced under all current Good Manufacturing Practices (cGMP) requirements as defined by the FDA. Food grade product is produced in a facility that is accredited as a Safe Quality Food (SQF) Level 2 Facility, certified under the Global Food Safety Initiative (GFSI), and meets the Food Chemical Codex (FCC) requirements.

**EPA'S CLEAN WATER AND CLEAN AIR ACTS:**

Component	Clean Water Act - Priority	CAA - ODS CLASS 1	CAA - Volatile Organic	CAA - HON Rule -	CAA - Hazard Air Pollutants	CAA - Urban HAPs List	SNAP - Substitutes	EPA RMP Toxic or

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	Pollutants	AND CLASS 2	Compounds (VOCs) in SOCM1	Organic HAPs		(Integrated Urban Strategy)	for ODS	Flammable TPQ
Methylene chloride (Dichloromethane) 75-09-2 ( 98.8 - 100 )	Present		Present	Present	Present	Present		
Propylene oxide 75-56-9 ( 0 - 1.2 )			Present	Present	Present			Toxic (10000 lb threshold quantity)

## NATIONAL INVENTORY STATUS

Component	TSCA Inventory	TSCA 12(b)	TSCA - Section 4	TSCA - Section 5	TSCA - Section 6	TSCA - Section 8	TSCA - 8(a) PAIR	TSCA - 8(d) IUR	TSCA - 8(a) CAIR
75-09-2	Listed				Chemicals subject to Risk Evaluation	Listed			
75-56-9	Listed					Listed			

**U.S. INVENTORY STATUS: Toxic Substance Control Act (TSCA):** All components are listed or exempt.

**TSCA 12(b):** Methylene Chloride is subject to TSCA 12(b) annual reporting requirements (per country)  
De minimis reporting level: 0.1%  
TSCA Section(s): 6(a).

**Canadian Chemical Inventory:** All components of this product are listed on either the DSL or the NDSL.

Component	DSL	NDSL
Methylene chloride (Dichloromethane) 75-09-2	Listed	Not Listed
Propylene oxide 75-56-9	Listed	Not Listed

## STATE REGULATIONS



**California Prop 65:** WARNING: This product can expose you to chemical Methylene Chloride, which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

Component	California Proposition 65 Cancer WARNING:	California Proposition 65 CRT List - Male reproductive toxin:	California Proposition 65 CRT List - Female reproductive toxin:	Massachusetts Right to Know Hazardous Substance List	New Jersey Right to Know Hazardous Substance List	New Jersey Special Health Hazards Substance List
<b>Methylene chloride (Dichloromethane) 75-09-2</b>	Listed	Not Listed	Not Listed	Listed	1255	Not Listed
<b>Propylene oxide 75-56-9</b>	Listed	Not Listed	Not Listed	Listed	1615	flammable - fourth degree; mutagen; reactive - second degree

Component	New Jersey - Environmental Hazardous Substance List	Pennsylvania Right to Know Hazardous Substance List	Pennsylvania Right to Know Special Hazardous Substances	Pennsylvania Right to Know Environmental Hazard List	Rhode Island Right to Know Hazardous Substance List



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<b>Methylene chloride (Dichloromethane)</b> 75-09-2	Listed	Listed	Present	Present	Listed
<b>Propylene oxide</b> 75-56-9	Listed	Listed	Present	Present	Not Listed

## CANADIAN REGULATIONS

• 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

Component	Canada - CEPA - Schedule I - List of Toxic Substances	Canada - NPRI	Canada - CEPA - 2010 Greenhouse Gases (GHG) Subject to Mandatory Reporting	Canadian Chemical Inventory:	NDSL:
Methylene chloride (Dichloromethane)	Present (037) Present (065)	Part 1, Group 1 Substance Part 4 Substance		Listed	
Propylene oxide	Present Present (that participate in atmospheric photochemical reactions except those under item number 65 on the Toxic Substances List source)	Part 1, Group 1 Substance Part 4 Substance		Listed Present Present (that participate in atmospheric photochemical reactions except those under item number 65 on the Toxic Substances List source)	

### WHMIS - Classifications of Substances:

- D1B - Poisonous and Infectious Material; Materials causing immediate and serious toxic effects - Toxic material
- D2A - Poisonous and Infectious Material; Materials causing other toxic effects - Very toxic material
- D2B - Poisonous and Infectious Material; Materials causing other toxic effects - Toxic material

## SECTION 16. OTHER INFORMATION

Rev. Date: 7-31-2019

### Reason for Revision:

- End-Use restriction via the EPA

### IMPORTANT:

The information presented herein, while not guaranteed, was prepared by 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, EXPRESSED OR IMPLIED, IS MADE REGARDING PERFORMANCE, SAFETY, SUITABILITY, STABILITY OR OTHERWISE. This information is

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not intended to be all-inclusive as to the manner and conditions of use, handling, storage, disposal and other factors that may involve other or additional legal, environmental, safety or performance considerations, and GreenChem assumes no liability whatsoever for the use of or reliance upon this information. While our technical personnel will be happy to respond to questions, safe handling and use of the product remains the responsibility of the customer. No suggestions for use are intended as, and nothing herein shall be construed as, a recommendation to infringe any existing patents or to violate any Federal, State, local or foreign laws.

OSHA 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, 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 Safety Data Sheet available to your employees.

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**End of Safety Data Sheet**