

Dichloromethane

SECTION 1. IDENTIFICATION

Product Identifier	Dichloromethane
Other Means of Identification	Methylene chloride, Dichloromethane Anhydrous
Recommended Use	Paint remover formulations, vapour depressant in aerosol applications, general cleaning solvent, foam blowing agent.
Restrictions on Use	Not for use in residential home or workshop areas not properly ventilated or not designed to accommodate the safe use of this chemical.
Manufacturer/Supplier Identifier	Caledon Laboratories Ltd, 40 Armstrong Avenue, Georgetown, Ontario, L7G-4R9, (905) 877-0101, www.caledonlabs.com
Emergency Phone No.	CANUTEC, (613) 996-6666
SDS No.	0102

SECTION 2. HAZARD IDENTIFICATION

Classified according to Canada's Hazardous Products Regulations (WHMIS 2015) and the US Hazard Communication Standard (HCS 2012).

Classification

Skin irritation - Category 2; Eye irritation - Category 2B; Carcinogenicity - Category 2; Specific target organ toxicity (single exposure) - Category 3; Specific target organ toxicity (repeated exposure) - Category 2

Label Elements



Signal Word:

Warning

Hazard Statement(s):

Causes skin and eye irritation.

May cause respiratory irritation.

May cause drowsiness or dizziness.

May cause damage to organs (blood, kidneys) through prolonged or repeated exposure.

Suspected of causing cancer.

Precautionary Statement(s):

Prevention:

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Do not breathe dust/fume/gas/mist/vapours/spray.

Wash thoroughly after handling.

Use only outdoors or in a well-ventilated area.

Response:

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

Call a POISON CENTRE or doctor if you feel unwell.

IF ON SKIN: Wash with plenty of water.

If skin irritation occurs: Get medical advice/attention.

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Take off contaminated clothing and wash it before reuse.

Specific treatment (see supplemental first aid instruction on this label).

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

Continue rinsing.

If eye irritation persists: Get medical advice/attention.

IF exposed or concerned: Get medical advice/attention.

Get medical advice/attention if you feel unwell.

Storage:

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

Store locked up.

Disposal:

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

Other Hazards

HEALTH RISKS:

EYE CONTACT: May cause eye irritation. In case of contact with the product there may be tearing, redness, a feeling of tingling or burning and blurred vision.

SKIN CONTACT: May cause effects ranging from mild irritation to severe pain, and possibly burns, depending on the intensity of the contact. Absorption through the skin may occur.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance:

Chemical Name	CAS No.	%	Other Identifiers
Dichloromethane (Methylene Chloride)	75-09-2	>99.9	EU EINECS NUMBER-200-838-9
AMYLENE (2-Methyl-2-butene)	513-35-9	0.005	EC NUMBER 208-156-3

SECTION 4. FIRST-AID MEASURES

First-aid Measures

Inhalation

Move to fresh air. Keep at rest in a position comfortable for breathing. If breathing is difficult, trained personnel should administer emergency oxygen if advised to do so by Poison Centre or doctor.

Skin Contact

Avoid direct contact. Wear chemical protective clothing if necessary. Take off contaminated clothing, shoes and leather goods (e.g. watchbands, belts). Immediately rinse with lukewarm, gently flowing water for 15-20 minutes. If skin irritation occurs, get medical advice or attention. Clean clothing, shoes and leather goods. Double bag, seal, label and leave contaminated clothing, shoes and leather goods at the scene for safe disposal.

Eye Contact

Avoid direct contact. Wear chemical protective gloves if necessary. Immediately rinse the contaminated eye(s) with lukewarm, gently flowing water for 15-20 minutes, while holding the eyelid(s) open. If a contact lens is present, DO NOT delay flushing or attempt to remove the lens. If eye irritation persists, get medical advice or attention.

Ingestion

Rinse mouth with water. Get medical advice or attention if you feel unwell or are concerned.

First-aid Comments

Protection of First-Aiders: Protect against vapour/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 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

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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.

Most Important Symptoms and Effects, Acute and Delayed

Acute Symptoms/Effects: Listed below.

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 vapour. 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.

Immediate Medical Attention and Special Treatment

Special Instructions

INHALATION: If inhalation of this material occurs and adverse effects result, move person to fresh air and keep comfortable for breathing. Call a POISON CENTRE or doctor/physician. See Notes to Physician 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. The specific treatment is flushing affected area with plenty of water.

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. Contact a poison centre or doctor/physician if you feel unwell.

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.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media

Use foam, dry chemical, CO₂, or water spray.

Unsuitable Extinguishing Media

None known.

Specific Hazards Arising from the Product

Hydrogen chloride, Chlorine, Phosgene, Oxides of carbon.

Special Protective Equipment and Precautions for Fire-fighters

Approach fire from upwind to avoid hazardous vapours or gases. Do NOT apply water directly to spill. Knock down vapours or gases with water fog or fine water spray. Dike and recover contaminated water for appropriate disposal.

Fire Fighting: Wear NIOSH approved positive-pressure self-contained breathing apparatus operated in pressure demand mode. Concentrated vapours 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.

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

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positive-pressure mode.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, and Emergency Procedures

Evacuate the area immediately. Isolate the hazard area. Keep out unnecessary and unprotected personnel. Use the personal protective equipment recommended in Section 8 of this safety data sheet. Increase ventilation to area or move leaking container to a well-ventilated and secure area. Remove or isolate incompatible materials as well as other hazardous materials. May accumulate in hazardous amounts in low-lying areas especially inside confined spaces, if ventilation is not sufficient. Before entry, especially into confined areas, check atmosphere with an appropriate monitor.

Environmental Precautions

If the spill is inside a building, prevent product from entering drains, ventilation systems and confined areas.

Methods and Materials for Containment and Cleaning Up

Small spills or leaks: contain and soak up spill with absorbent that does not react with spilled product. Large spills or leaks: dike spilled product to prevent runoff. Remove or recover liquid using pumps or vacuum equipment.

SECTION 7. HANDLING AND STORAGE

Precautions for Safe Handling

Do not breathe in this product. Do not get in eyes, on skin or on clothing. Do not swallow. Wear personal protective equipment to avoid direct contact with this chemical. Only use where there is adequate ventilation. Do NOT eat, drink or store food in work areas. Wash hands thoroughly after handling this material.

Conditions for Safe Storage

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).

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

Chemical Name	ACGIH TLV®		OSHA PEL		AIHA WEEL	
	TWA	STEL	TWA	Ceiling	8-hr TWA	TWA
Dichloromethane (Methylene Chloride)	50 ppm A3		25 ppm	125 ppm		

Appropriate Engineering Controls

Concentrated product: product (diluted as directed): use local exhaust ventilation and enclosure, if necessary, to control amount in the air. Use stringent control measures such as process enclosure to prevent product release into the workplace.

Individual Protection Measures

Eye/Face Protection

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 Protection

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

Suitable materials are: Viton®, polyvinyl alcohol.

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Respiratory Protection

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.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Basic Physical and Chemical Properties

Appearance	Colourless.
Odour	Suffocating (Dichloromethane (Methylene Chloride))
Odour Threshold	Causes olfactory fatigue.
pH	Not applicable
Melting Point/Freezing Point	~ -97 °C (-143 °F) (melting); ~ -95 °C (-139 °F) (freezing)
Initial Boiling Point/Range	39.8 - 40.0 °C (103.6 - 104.0 °F)
Flash Point	Not available
Evaporation Rate	~ 0.7 (diethyl ether = 1)
Flammability (solid, gas)	Not available
Upper/Lower Flammability or Explosive Limit	19% (upper); 12% (lower)
Vapour Pressure	~ 350 mm Hg at 20 °C (Dichloromethane (Methylene Chloride))
Vapour Density (air = 1)	~ 2.9
Relative Density (water = 1)	1.325 at 25 °C (Dichloromethane (Methylene Chloride))
Solubility	Slightly soluble in water; Not available (in other liquids)
Partition Coefficient, n-Octanol/Water (Log Kow)	1.25
Auto-ignition Temperature	556.1 °C (1033.0 °F)
Decomposition Temperature	Not available
Viscosity	0.41 centipoises at 25 °C (dynamic)
Other Information	
Physical State	Liquid
Molecular Formula	CH ₂ Cl ₂
Molecular Weight	84.93

SECTION 10. STABILITY AND REACTIVITY

Reactivity

Reacts violently with active metals.

Chemical Stability

Normally stable.

Possibility of Hazardous Reactions

None known.

Conditions to Avoid

Temperatures above 100.0 °C (212.0 °F)

Incompatible Materials

Reacts violently with: metals (e.g. aluminum), oxidizing agents (e.g. peroxides), oxygen, strong oxidizing agents (e.g. perchloric acid).

Hazardous Decomposition Products

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Corrosive phosgene; corrosive hydrogen chloride; corrosive chlorine.

SECTION 11. TOXICOLOGICAL INFORMATION

Likely Routes of Exposure

Inhalation; skin contact; eye contact.

Acute Toxicity

Chemical Name	LC50	LD50 (oral)	LD50 (dermal)
Dichloromethane (Methylene Chloride)	76,000 mg/m ³ (rat) (4-hour exposure)	985 mg/kg (rat)	> 2,000 mg/kg (rat)

Skin Corrosion/Irritation

Animal tests show moderate or severe irritation.

Methylene Chloride: 810 mg/24 hour(s) skin-rabbit severe; 100 mg/24 hour(s) skin-rabbit moderate

Serious Eye Damage/Irritation

Human experience and animal tests show mild irritation. Symptoms include sore, red eyes, and tearing.

Methylene Chloride: 162 mg eyes-rabbit moderate; 10 mg eyes-rabbit mild; 500 mg/24 hour(s) eyes-rabbit mild

STOT (Specific Target Organ Toxicity) - Single Exposure

Inhalation

At high concentrations depression of the central nervous system. Symptoms may include headache, nausea, dizziness, drowsiness and confusion. Symptoms may include coughing, shortness of breath, difficult breathing and tightness in the chest.

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 Absorption

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

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.

Aspiration Hazard

No information was located.

STOT (Specific Target Organ Toxicity) - Repeated Exposure

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

Respiratory and/or Skin Sensitization

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

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.

Carcinogenicity

Chemical Name	IARC	ACGIH®	NTP	OSHA
Dichloromethane (Methylene Chloride)	Group 2A	A3	Reasonably anticipated	Listed

May cause cancer based on animal studies. Group 2A – Probably carcinogenic to humans. Reasonably anticipated

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human carcinogen. Listed.

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.

Reproductive Toxicity

Development of Offspring

Not known to harm the unborn child.

Sexual Function and Fertility

Not known to cause effects on sexual function or fertility.

Effects on or via Lactation

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.

Germ Cell Mutagenicity

Conclusions cannot be drawn from the limited studies available.

Positive results have been observed in the Ames test. In mammalian systems, responses have generally been negative.

Interactive Effects

May potentiate other agents that cause central nervous system (CNS) and respiratory system depression, such as alcohol, opiates.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

:

Acute Aquatic Toxicity

Chemical Name	LC50 Fish	EC50 Crustacea	ErC50 Aquatic Plants	ErC50 Algae
Dichloromethane (Methylene Chloride)	>= 220 mg/L (Lepomis macrochirus (bluegill); 96-hour; fresh water; static)	~ 224 mg/L (Daphnia magna (water flea); 48-hour)		

Persistence and Degradability

:

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 vapour 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.

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

Bioaccumulative Potential

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

:

Mobility in Soil

No information was located.

:

Other Adverse Effects

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This product contains volatile organic compounds.

:

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal Methods

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

Regulation	UN No.	Proper Shipping Name	Transport Hazard Class(es)	Packing Group
Canadian TDG	1593	Dichloromethane	6.1	III
US DOT	1593	Dichloromethane	6.1	III
IMO (Marine)	1593	Dichloromethane	6.1	III

Special Precautions Not applicable

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

Not applicable

SECTION 15. REGULATORY INFORMATION

Safety, Health and Environmental Regulations

Canada

Domestic Substances List (DSL) / Non-Domestic Substances List (NDSL)

All ingredients are listed on the DSL/NDSL.

:

CEPA - National Pollutant Release Inventory (NPRI)

Part 1A.

:

USA

Toxic Substances Control Act (TSCA) Section 8(b)

Listed on the TSCA Inventory.

:

Additional USA Regulatory Lists

:

Custom Regulatory 1

:

Custom Regulatory 2

:

Custom Regulatory 3

:

SECTION 16. OTHER INFORMATION

NFPA Rating **Health - 2** **Flammability - 1** **Instability - 0**

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Based on Dichloromethane (Methylene Chloride)

SDS Prepared By Caledon Laboratories Ltd

Date of Preparation April 25, 2016

Date of Last Revision April 27, 2017

Revision Indicators The following SDS content was changed on April 27, 2017:
Other Means of Identification.

References CHEMINFO database. Canadian Centre for Occupational Health and Safety (CCOHS).
Suppliers Safety Data Sheets.

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