

1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	Dichloromethane	
Product Number	:	270997	
Brand	:	Sigma-Aldrich	
Product Use	:	For laboratory research purposes.	
Supplier	:	Sigma-Aldrich Canada Co. 2149 Winston Park Drive OAKVILLE ON L6H 6J8 CANADA	Manufacturer : Sigma-Aldrich Corporation 3050 Spruce St. St. Louis, Missouri 63103 USA
Telephone	:	+1 9058299500	
Fax	:	+1 9058299292	
Emergency Phone # (For both supplier and manufacturer)	:	1-800-424-9300	
Preparation Information	:	Sigma-Aldrich Corporation Product Safety - Americas Region 1-800-521-8956	

2. HAZARDS IDENTIFICATION

Emergency Overview

Target Organs

Liver, pancreas, Blood, Central nervous system, Heart, Kidney

WHMIS Classification

D1B	Toxic Material Causing Immediate and Serious Toxic Effects	Toxic
D2A	Very Toxic Material Causing Other Toxic Effects	Chronic toxicity
D2B	Toxic Material Causing Other Toxic Effects	Carcinogen Specific target organ toxicity - single exposure Moderate skin irritant Moderate eye irritant

GHS Classification

Acute toxicity, Oral (Category 5)
Acute toxicity, Dermal (Category 5)
Skin irritation (Category 2)
Eye irritation (Category 2A)
Carcinogenicity (Category 2)
Specific target organ toxicity - single exposure (Category 3), Respiratory system, Central nervous system
Specific target organ toxicity - repeated exposure, Oral (Category 2), Liver, Blood
Specific target organ toxicity - repeated exposure, Inhalation (Category 2), Central nervous system

GHS Label elements, including precautionary statements

Pictogram



Signal word

Warning

Hazard statement(s)
H303 + H313

May be harmful if swallowed or in contact with skin.

H315 Causes skin irritation.
 H319 Causes serious eye irritation.
 H335 May cause respiratory irritation.
 H336 May cause drowsiness or dizziness.
 H351 Suspected of causing cancer.
 H373 May cause damage to organs (Liver, Blood) through prolonged or repeated exposure if swallowed.
 H373 May cause damage to organs (Central nervous system) through prolonged or repeated exposure if inhaled.

Precautionary statement(s)

P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
 P281 Use personal protective equipment as required.
 P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

HMIS Classification

Health hazard: 2
Chronic Health Hazard: *
Flammability: 0
Physical hazards: 0

Potential Health Effects

Inhalation May be harmful if inhaled. Causes respiratory tract irritation. Vapours may cause drowsiness and dizziness.
Skin May be harmful if absorbed through skin. Causes skin irritation.
Eyes Causes eye irritation.
Ingestion May be harmful if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : Methylene chloride

Formula : CH₂Cl₂

CAS-No.	EC-No.	Index-No.	Concentration
Methylene chloride			
75-09-2	200-838-9	602-004-00-3	>= 99.9 %
2-Methyl-2-butene			
513-35-9	208-156-3	-	> 0.005 - < 0.015 %

4. FIRST AID MEASURES

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIREFIGHTING MEASURES

Conditions of flammability

Not flammable or combustible.

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

Hazardous combustion products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen chloride gas

Explosion data - sensitivity to mechanical impact

no data available

Explosion data - sensitivity to static discharge

no data available

6. ACCIDENTAL RELEASE MEASURES**Personal precautions**

Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Methods and materials for containment and cleaning up

Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE**Precautions for safe handling**

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

Conditions for safe storage

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.

Heat sensitive. Store under inert gas.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Components with workplace control parameters**

Components	CAS-No.	Value	Control parameters	Basis
Methylene chloride	75-09-2	TWA	25 ppm	Canada. British Columbia OEL
Remarks	IARC '2B' applies to substances deemed possibly carcinogenic to humans.			
		TWA	50 ppm 174 mg/m ³	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
		TWAEV	50 ppm 174 mg/m ³	Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants
	A substance to which exposure must be reduced to a minimum in accordance with section 42 Carcinogenic effect suspected in humans			
		TWA	50 ppm	USA. ACGIH Threshold Limit Values (TLV)

Personal protective equipment

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type AXBEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Splash contact

Material: Fluorinated rubber

Minimum layer thickness: 0.7 mm

Break through time: 148 min

Material tested: Vitoject® (KCL 890 / Aldrich Z677698, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Eye protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Specific engineering controls

Use mechanical exhaust or laboratory fumehood to avoid exposure.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	liquid
Colour	colourless

Safety data

pH	no data available
Melting point/freezing point	Melting point/range: -97 °C (-143 °F)
Boiling point	39.8 - 40 °C (103.6 - 104 °F)
Flash point	no data available
Ignition temperature	556.1 °C (1,033.0 °F)
Auto-ignition temperature	556.1 °C (1,033.0 °F) 662.0 °C (1,223.6 °F)
Lower explosion limit	12 %(V)
Upper explosion limit	19 %(V)
Vapour pressure	470.9 hPa (353.2 mmHg) at 20.0 °C (68.0 °F)
Density	1.325 g/mL at 25 °C (77 °F)

Water solubility	slightly soluble
Partition coefficient: n-octanol/water	log Pow: 1.25
Relative vapour density	2.93 - (Air = 1.0)
Odour	no data available
Odour Threshold	no data available
Evaporation rate	0.71

10. STABILITY AND REACTIVITY

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

no data available

Conditions to avoid

Heat, flames and sparks. Exposure to sunlight.

Materials to avoid

Alkali metals, Aluminum, Strong oxidizing agents, Bases, Amines, Magnesium, Strong acids and strong bases, Vinyl compounds

Hazardous decomposition products

Other decomposition products - no data available

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen chloride gas

Contains the following stabiliser(s):

2-Methyl-2-butene (>0.005 - <0.015 %)

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Oral LD50

LD50 Oral - rat - > 2,000 mg/kg

Inhalation LC50

LC50 Inhalation - rat - 52,000 mg/m³

Dermal LD50

LD50 Dermal - rat - > 2,000 mg/kg

Other information on acute toxicity

no data available

Skin corrosion/irritation

Skin - rabbit - Irritating to skin. - 24 h - Draize Test

Serious eye damage/eye irritation

Eyes - rabbit - Irritating to eyes. - 24 h - Draize Test

Respiratory or skin sensitisation

no data available

Germ cell mutagenicity

Genotoxicity in vivo - rat - Oral

DNA damage

Carcinogenicity

Carcinogenicity - rat - Inhalation

Tumorigenic: Carcinogenic by RTECS criteria. Endocrine: Tumors.

Limited evidence of carcinogenicity in animal studies

Suspected human carcinogens

IARC: 2B - Group 2B: Possibly carcinogenic to humans (Methylene chloride)

Reproductive toxicity

no data available

Teratogenicity

Specific target organ toxicity - single exposure (Globally Harmonized System)

May cause respiratory irritation.

May cause drowsiness or dizziness.

Specific target organ toxicity - repeated exposure (Globally Harmonized System)

Inhalation - May cause damage to organs through prolonged or repeated exposure. - Central nervous system

Oral - May cause damage to organs through prolonged or repeated exposure. - Liver, Blood

Aspiration hazard

no data available

Potential health effects

Inhalation	May be harmful if inhaled. Causes respiratory tract irritation. Vapours may cause drowsiness and dizziness.
Ingestion	May be harmful if swallowed.
Skin	May be harmful if absorbed through skin. Causes skin irritation.
Eyes	Causes eye irritation.

Signs and Symptoms of Exposure

Dichloromethane is metabolized in the body producing carbon monoxide which increases and sustains carboxyhemoglobin levels in the blood, reducing the oxygen-carrying capacity of the blood., Acts as a simple asphyxiant by displacing air., anesthetic effects, Difficulty in breathing, Headache, Dizziness, Prolonged or repeated contact with skin may cause:, defatting, Dermatitis, Contact with eyes can cause:, Redness, Blurred vision, Provokes tears., Effects due to ingestion may include:, Gastrointestinal discomfort, Central nervous system depression, Paresthesia., Drowsiness, Convulsions, Conjunctivitis., Pulmonary edema. Effects may be delayed., Irregular breathing., Stomach/intestinal disorders, Nausea, Vomiting, Increased liver enzymes., Weakness, Heavy or prolonged skin exposure may result in the absorption of harmful amounts of material., Abdominal pain

Synergistic effects

no data available

Additional Information

RTECS: PA8050000

12. ECOLOGICAL INFORMATION

Toxicity

Toxicity to fish	LC50 - Pimephales promelas (fathead minnow) - 193.00 mg/l - 96 h NOEC - Cyprinodon variegatus (sheepshead minnow) - 130 mg/l - 96 h
Toxicity to daphnia and other aquatic invertebrates	EC50 - Daphnia magna (Water flea) - 1,682.00 mg/l - 48 h

Persistence and degradability

no data available

Bioaccumulative potential

no data available

Mobility in soil

no data available

PBT and vPvB assessment

no data available

Other adverse effects

13. DISPOSAL CONSIDERATIONS**Product**

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION**DOT (US)**

UN number: 1593 Class: 6.1 Packing group: III
Proper shipping name: Dichloromethane
Reportable Quantity (RQ): 1000 lbs
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG

UN number: 1593 Class: 6.1 Packing group: III EMS-No: F-A, S-A
Proper shipping name: DICHLOROMETHANE
Marine pollutant: No

IATA

UN number: 1593 Class: 6.1 Packing group: III
Proper shipping name: Dichloromethane

15. REGULATORY INFORMATION**WHMIS Classification**

D1B	Toxic Material Causing Immediate and Serious Toxic Effects	Toxic
D2A	Very Toxic Material Causing Other Toxic Effects	Chronic toxicity
D2B	Toxic Material Causing Other Toxic Effects	Carcinogen Specific target organ toxicity - single exposure Moderate skin irritant Moderate eye irritant

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

16. OTHER INFORMATION**Text of H-code(s) and R-phrases mentioned in Section 3****Further information**

Copyright 2013 Sigma-Aldrich Co. LLC. License granted to make unlimited paper copies for internal use only. The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.
