

Material Safety Data Sheet

Version 5.1
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1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Dichloromethane
Product Number : D65100
Brand : Sigma-Aldrich
Supplier : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA
Telephone : +1 800-325-5832
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Emergency Phone # (For both supplier and manufacturer)
Preparation Information : Sigma-Aldrich Corporation
Product Safety - Americas Region
1-800-521-8956

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Carcinogen, Target Organ Effect

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

GHS Classification
Carcinogenicity (Category 2)

GHS Label elements, including precautionary statements



Pictogram
Signal word
Warning
Hazard statement(s)
H351
Suspected of causing cancer.

Precautionary statement(s)
P281
Use personal protective equipment as required.

HMIS Classification

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

NFPA Rating

Health hazard: 2
Fire: 0
Reactivity Hazard: 0

Potential Health Effects

Sigma-Aldrich - D65100
Delivery 0843591590-000010 Purchase Order 111077

Inhalation
Skin
Eyes
Ingestion

May be harmful if inhaled. May cause respiratory tract irritation.
May be harmful if absorbed through skin. May cause skin irritation.
May cause eye irritation.
May be harmful if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : Methylene chloride

Formula : CH₂Cl₂
Molecular Weight : 84.93 g/mol

Component	Concentration
Methylene chloride	
CAS-No.	75-09-2
EC-No.	200-838-9
Index-No.	602-004-00-3

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

Flush eyes with water as a precaution.

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

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Use personal protective equipment. Avoid breathing vapors, 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.

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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
Remarks	Potential Occupational Carcinogen See Appendix A			
Methylene chloride	75-09-2	TWA	50 ppm	USA ACGIH Threshold Limit Values (TLV)
	Central Nervous System Impairment Carboxyhemoglobinemia Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Confirmed animal carcinogen with unknown relevance to humans			
	Substance listed, for more information see OSHA document 1910.1052			
	See 1910.1052			

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 gloves' 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.

Eye protection

Safety glasses with side-shields conforming to EN166 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.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form liquid
Colour colourless

Safety data

pH no data available
Melting point/range: 97 °C (207 °F) - lit.
Boiling point 39.8 - 40 °C (103.6 - 104 °F) - lit.

Flash point no data available

Ignition temperature 556.1 °C (1,033.0 °F)

Autoignition temperature 556.1 °C (1,033.0 °F)

Lower explosion limit 662.0 °C (1,223.6 °F)

Upper explosion limit 12 %(V)

Vapour pressure 19 %(V)

Density 470.9 hPa (353.2 mmHg) at 20.0 °C (68.0 °F)

Water solubility 1.325 g/mL at 25 °C (77 °F)

Partition coefficient: log Pow: 1.25

n-octanol/water

Relative vapour density 2.93

Odour - (Air = 1.0)

Odour Threshold no data available

Evaporation rate no data available

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

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

Other decomposition products - no data available

Contains the following stabiliser(s):

2-Methyl-2-butene (0.005 %)

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Oral LD50

LD50 Oral - rat - 1,600 mg/kg

Remarks: Behavioral:Ataxia.

Inhalation LC50

LC50 Inhalation - rat - 52,000 mg/m³

Dermal LD50

no data available

Other information on acute toxicity

no data available

Skin corrosion/irritation

Skin - rabbit - Skin irritation - 24 h

Serious eye damage/eye irritation

Eyes - rabbit - Mild eye irritation - 24 h
Respiratory or skin sensitization
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

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

NTP: Reasonably anticipated to be a human carcinogen (Methylene chloride)

Reproductive toxicity

no data available

Teratogenicity

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

no data available

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

no data available

Aspiration hazard

no data available

Potential health effects

Inhalation

May be harmful if inhaled. May cause respiratory tract irritation.

Ingestion

May be harmful if swallowed.

Skin

May be harmful if absorbed through skin. May cause skin irritation.

Eyes

May cause 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

EC50 - Daphnia magna (Water flea) - 1,682.00 mg/l - 48 h

Toxicity to daphnia

and other aquatic invertebrates

Persistence and degradability

no data available

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Bioaccumulative potential
no data available

Mobility in soil
no data available

PBT and vPvB assessment
no data available

Other adverse effects
no data available

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

OSHA Hazards

Carcinogen, Target Organ Effect

SARA 302 Components

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards

Chronic Health Hazard

Massachusetts Right To Know Components

Methylene chloride

CAS-No.
75-09-2

Revision Date
2007-07-01

Pennsylvania Right To Know Components

Methylene chloride

CAS-No.
75-09-2

Revision Date
2007-07-01

New Jersey Right To Know Components

Methylene chloride

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California Prop. 65 Components

WARNING! This product contains a chemical known to the State of California to cause cancer:
Methylene chloride

CAS-No.
75-09-2

Revision Date
2007-09-28

16. OTHER INFORMATION

Further information

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