1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Dichloromethane
Product Number : 443484
Brand : Sigma-Aldrich
Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO  63103
USA
Telephone : +18003255832
Fax : +18003255052
Emergency Phone # : (314) 776-6555

2. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : Methylene chloride
Formula : CH$_2$Cl$_2$
Molecular Weight : 84.93 g/mol

<table>
<thead>
<tr>
<th>CAS-No.</th>
<th>EC-No.</th>
<th>Index-No.</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>75-09-2</td>
<td>200-838-9</td>
<td>602-004-00-3</td>
<td>&gt;= 99.9 %</td>
</tr>
</tbody>
</table>

3. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Carcinogen, Target Organ Effect, Harmful by ingestion., Irritant

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

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
Inhalation May be harmful if inhaled. Causes respiratory tract irritation.
Skin May be harmful if absorbed through skin. Causes skin irritation.
Eyes Causes eye irritation.
Ingestion Harmful if swallowed.

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. FIRE-FIGHTING MEASURES

Flammable properties
Flash point no data available
Ignition temperature 556.1 °C (1,033.0 °F)

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

Special protective equipment for fire-fighters
Wear self contained breathing apparatus for fire fighting if necessary.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation.

Environmental precautions
Do not let product enter drains.

Methods for 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

Handling
Avoid inhalation of vapour or mist.
Normal measures for preventive fire protection.

Storage
Keep container tightly closed in a dry and well-ventilated place.
Heat sensitive. Store under inert gas.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value</th>
<th>Control</th>
<th>Update</th>
<th>Basis</th>
</tr>
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</table>

Sigma-Aldrich - 443484
Methylene chloride

<table>
<thead>
<tr>
<th>parameters</th>
<th>TWA</th>
<th>50 ppm</th>
<th>2007-01-01</th>
<th>USA. ACGIH Threshold Limit Values (TLV)</th>
</tr>
</thead>
</table>

Remarks

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: The agent 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 may not be relevant to worker exposure. Available epidemiologic studies do not confirm an increased risk of cancer in exposed humans. Available evidence does not suggest that the agent is likely to cause cancer in humans except under uncommon or unlikely routes or levels of exposure.

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.

Eye protection
Face shield and safety glasses

Skin and body protection
Choose body protection according to the amount and concentration of the dangerous substance at the 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 -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) -
Lower explosion limit 12 % (V)
Upper explosion limit 19 % (V)
Vapour pressure 470.8 hPa (353.1 mmHg) at 20.0 °C (68.0 °F)
1,687.3 hPa (1,265.6 mmHg) at 55.0 °C (131.0 °F)
57.99 hPa (43.50 mmHg) at 25 °C (77 °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)
Evaporation rate 0.71

10. STABILITY AND REACTIVITY

Storage stability
Stable under recommended storage conditions.

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

11. TOXICOLOGICAL INFORMATION

Acute toxicity
LD50 Oral - rat - 1,600 mg/kg

LC50 Inhalation - rat - 52,000 mg/m3

Irritation and corrosion
Skin - rabbit - Skin irritation - 24 h
Eyes - rabbit - Mild eye irritation - 24 h

Sensitisation
no data available

Chronic exposure
Carcinogenicity - rat - Inhalation
Tumorigenic: Carcinogenic by RTECS criteria. Endocrine: Tumors.

This product is or contains a component that has been reported to be possibly carcinogenic based on its IARC, ACGIH, NTP, or EPA classification.

IARC: 2B - Group 2B: Possibly carcinogenic to humans (Methylene chloride)
NTP: Reasonably anticipated to be a human carcinogen (Methylene chloride)

Genotoxicity in vivo - rat - Oral
DNA damage

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

**Potential Health Effects**

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**Target Organs**

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

**Additional Information**

RTECS: PA8050000

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### 12. ECOLOGICAL INFORMATION

**Elimination information (persistence and degradability)**

no data available

**Ecotoxicity effects**

- **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

**Further information on ecology**

no data available

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### 13. DISPOSAL CONSIDERATIONS

**Product**

Observe all federal, state, and local environmental regulations. 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.

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### 14. TRANSPORT INFORMATION

**DOT (US)**

- UN-Number: 1593
- Class: 6.1
- Packing group: III
- Proper shipping name: Dichloromethane
- 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
15. REGULATORY INFORMATION

OSHA Hazards
Carcinogen, Target Organ Effect, Harmful by ingestion., Irritant

DSL Status
All components of this product are on the Canadian DSL list.

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
Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

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Pennsylvania Right To Know Components

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New Jersey Right To Know Components

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California Prop. 65 Components
WARNING! This product contains a chemical known in the State of California to cause cancer.

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<td>2007-09-28</td>
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16. OTHER INFORMATION

Further information
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