1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Dichloromethane
Product Number : 270997
Brand : Sigma-Aldrich
Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA
Telephone : +1 800-325-5832
Fax : +1 800-325-5052
Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

Emergency Overview

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

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

GHS Label elements, including precautionary statements

Pictogram

Signal word Warning

Hazard statement(s)
H302 Harmful if swallowed.
H315 + H320 Causes skin and eye irritation.
H351 Suspected of causing cancer.

Precautionary statement(s)
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

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.
### 3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Synonyms</th>
<th>Methylene chloride</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formula</td>
<td>CH₂Cl₂</td>
</tr>
<tr>
<td>Molecular Weight</td>
<td>84.93 g/mol</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CAS-No.</th>
<th>EC-No.</th>
<th>Index-No.</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methylene chloride</td>
<td>75-09-2</td>
<td>200-838-9</td>
<td>602-004-00-3</td>
</tr>
</tbody>
</table>

### 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

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

**Conditions for safe 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 parameters</th>
<th>Update</th>
<th>Basis</th>
</tr>
</thead>
</table>

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**Methylene chloride**

<table>
<thead>
<tr>
<th></th>
<th>75-09-2</th>
<th>TWA</th>
<th>50 ppm</th>
<th>2007-01-01</th>
<th>USA. ACGIH Threshold Limit Values (TLV)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remarks</td>
<td>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.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Substance listed; for more information see OSHA document 1910.1052</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>See 1910.1052</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 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 work place.

**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
10. STABILITY AND REACTIVITY

**Chemical 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

**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.

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

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

no data available

**Specific target organ toxicity - single exposure (GHS)**
no data available

**Specific target organ toxicity - repeated exposure (GHS)**
Aspiration hazard
no data available

Potential health effects

<table>
<thead>
<tr>
<th>Mode</th>
<th>Effect Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inhalation</td>
<td>May be harmful if inhaled. Causes respiratory tract irritation.</td>
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<tr>
<td>Ingestion</td>
<td>Harmful if swallowed.</td>
</tr>
<tr>
<td>Skin</td>
<td>May be harmful if absorbed through skin. Causes skin irritation.</td>
</tr>
<tr>
<td>Eyes</td>
<td>Causes eye irritation.</td>
</tr>
</tbody>
</table>

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.

Additional Information
RTECS: PA8050000

12. ECOLOGICAL INFORMATION

Toxicity

<table>
<thead>
<tr>
<th>Category</th>
<th>Concentration</th>
<th>Time</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toxicity to fish</td>
<td>LC50 - Pimephales promelas (fathead minnow)</td>
<td>193.00 mg/l - 96 h</td>
<td></td>
</tr>
<tr>
<td></td>
<td>NOEC - Cyprinodon variegatus (sheepshead minnow)</td>
<td>130 mg/l - 96 h</td>
<td></td>
</tr>
<tr>
<td>Toxicity to daphnia and other aquatic invertebrates.</td>
<td>EC50 - Daphnia magna (Water flea)</td>
<td>1,682.00 mg/l - 48 h</td>
<td></td>
</tr>
</tbody>
</table>

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
no data available

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.

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, 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

<table>
<thead>
<tr>
<th>Chemical</th>
<th>CAS-No.</th>
<th>Revision Date</th>
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</thead>
<tbody>
<tr>
<td>Methylene chloride</td>
<td>75-09-2</td>
<td>2007-07-01</td>
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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

<table>
<thead>
<tr>
<th>Chemical</th>
<th>CAS-No.</th>
<th>Revision Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>WARNING! This product contains a chemical known to the State of California to cause cancer. Methylene chloride</td>
<td>75-09-2</td>
<td>2007-09-28</td>
</tr>
</tbody>
</table>

16. OTHER INFORMATION

Further information
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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 Co., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.