1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Dichloromethane

Product Number : 13050

CAS-No. : 75-09-2

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the product on the safety data sheet

Company : Ladd Research
83 Holly Court
Williston, VT 05495
USA

Telephone : 802-658-4961
Fax : 802-660-8859

1.4 Emergency telephone number

Emergency Phone # : +1-703-741-5500 (Chemtrec)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Skin irritation (Category 2), H315
Eye irritation (Category 2A), H319
Carcinogenicity (Category 2), H351
Specific target organ toxicity - single exposure (Category 3), Respiratory system, Central nervous system, H335, H336
Specific target organ toxicity - repeated exposure, Oral (Category 2), Liver, Blood, H373
Specific target organ toxicity - repeated exposure, Inhalation (Category 2), Central nervous system, H373

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word : Warning

Hazard statement(s)

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.
2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

<table>
<thead>
<tr>
<th>Synonyms</th>
<th>Methylene chloride</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DCM</td>
</tr>
</tbody>
</table>

- Formula: CH₂Cl₂
- Molecular weight: 84.93 g/mol
- CAS-No.: 75-09-2
- EC-No.: 200-838-9
- Index-No.: 602-004-00-3
- Registration number: 01-2119480404-41-XXXX

Hazardous components

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methylene chloride</td>
<td>Skin Irrit. 2; Eye Irrit. 2A; Carc. 2; STOT SE 3; STOT RE 2; H315, H319, H335, H336, H351, H373, H373</td>
<td>&lt;= 100 %</td>
</tr>
</tbody>
</table>

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

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

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.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

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

5.2 Special hazards arising from the substance or mixture
No data available

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.
For personal protection see section 8.

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

6.3 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.

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
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.
Storage class (TRGS 510): Non-combustible, acute toxic Cat.3 / toxic hazardous materials or hazardous materials causing chronic effects

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Value</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remarks</td>
<td></td>
<td>Potential Occupational Carcinogen</td>
<td>See Appendix A</td>
<td></td>
</tr>
</tbody>
</table>

See Appendix A
Methylene chloride 75-09-2 TWA 50.000000 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

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

Substance listed; for more information see OSHA document 1910.1052

See Table Z-2

PEL 25.000000 ppm OSHA Specifically Regulated Chemicals/Carcinogens

1910.1052 This section applies to all occupational exposures to methylene chloride (MC), Chemical Abstracts Service Registry Number 75-09-2, in general industry, construction and shipyard employment. Methylene chloride (MC) means an organic compound with chemical formula, CH2Cl2. Its Chemical Abstracts Service Registry Number is 75-09-2. Its molecular weight is 84.9 g/mole OSHA specifically regulated carcinogen

STEL 125.000000 ppm OSHA Specifically Regulated Chemicals/Carcinogens

1910.1052 This section applies to all occupational exposures to methylene chloride (MC), Chemical Abstracts Service Registry Number 75-09-2, in general industry, construction and shipyard employment. Methylene chloride (MC) means an organic compound with chemical formula, CH2Cl2. Its Chemical Abstracts Service Registry Number is 75-09-2. Its molecular weight is 84.9 g/mole OSHA specifically regulated carcinogen

8.2 Exposure controls

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

Personal protective equipment

Eye/face 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 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.

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.

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).

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

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a) Appearance
   Form: liquid
   Colour: colourless

b) Odour
   No data available

c) Odour Threshold
   No data available

d) pH
   No data available

e) Melting point/freezing point
   Melting point/range: -97 °C (-143 °F)

f) Initial boiling point and boiling range
   39.8 - 40 °C (103.6 - 104 °F)

g) Flash point
   No data available

h) Evaporation rate
   0.71

i) Flammability (solid, gas)
   No data available

j) Upper/lower flammability or explosive limits
   Upper explosion limit: 19 %(V)
   Lower explosion limit: 12 %(V)

k) Vapour pressure
   470.9 hPa (353.2 mmHg) at 20.0 °C (68.0 °F)

l) Vapour density
   2.93 - (Air = 1.0)

m) Relative density
   1.325 g/mL at 25 °C (77 °F)

n) Water solubility
   slightly soluble

o) Partition coefficient: n-octanol/water
   log Pow: 1.25
p) Auto-ignition temperature
   556.1 °C (1,033.0 °F)
   662.0 °C (1,223.6 °F)
q) Decomposition temperature
   No data available
r) Viscosity
   No data available
s) Explosive properties
   No data available
t) Oxidizing properties
   No data available

9.2 Other safety information
   Relative vapour density 2.93 - (Air = 1.0)

10. STABILITY AND REACTIVITY
10.1 Reactivity
   No data available
10.2 Chemical stability
   Stable under recommended storage conditions.
   Contains the following stabiliser(s):
   2-Methyl-2-butene (>0.005 - <0.015 %)
10.3 Possibility of hazardous reactions
   No data available
10.4 Conditions to avoid
   Heat, flames and sparks. Exposure to sunlight.
10.5 Incompatible materials
   Alkali metals, Aluminum, Strong oxidizing agents, Bases, Amines, Magnesium, Strong acids and strong bases, Vinyl compounds
10.6 Hazardous decomposition products
   Other decomposition products - No data available
   In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION
11.1 Information on toxicological effects

   Acute toxicity
   LD50 Oral - Rat - > 2,000 mg/kg
   LC50 Inhalation - Rat - 52,000 mg/m3
   LD50 Dermal - Rat - > 2,000 mg/kg
   (OECD Test Guideline 402)
   No data available

   Skin corrosion/irritation
   Skin - Rabbit
   Result: Irritating to skin. - 24 h
   (Draize Test)

   Serious eye damage/eye irritation
   Eyes - Rabbit
   Result: Irritating to eyes. - 24 h
   (Draize Test)

   Respiratory or skin sensitisation
   No data available

   Germ cell mutagenicity
   Rat
   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)
NTP: Reasonably anticipated to be a human carcinogen (Methylene chloride)
OSHA: OSHA specifically regulated carcinogen (Methylene chloride)

Reproductive toxicity
No data available

Specific target organ toxicity - single exposure
May cause respiratory irritation.
May cause drowsiness or dizziness.

Specific target organ toxicity - repeated exposure
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

Additional Information
RTECS: PA8050000
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

Stomach - Irregularities - Based on Human Evidence
Stomach - Irregularities - Based on Human Evidence

12. ECOLOGICAL INFORMATION
12.1 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

12.2 Persistence and degradability
Biodegradability Result: < 26 % - Not readily biodegradable. (OECD Test Guideline 301C)

12.3 Bioaccumulative potential
Does not bioaccumulate.

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted
12.6 Other adverse effects

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
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. Offer surplus and non-recyclable solutions to a licensed disposal company.

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
Poison Inhalation Hazard: No

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

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

15. REGULATORY INFORMATION

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

**SARA 313 Components**
The following components are subject to reporting levels established by SARA Title III, Section 313:

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

**SARA 311/312 Hazards**
Acute Health Hazard, Chronic Health Hazard

**Massachusetts Right To Know Components**

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<th>CAS-No.</th>
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<tbody>
<tr>
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<td>2007-07-01</td>
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**Pennsylvania Right To Know Components**

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<tbody>
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**New Jersey Right To Know Components**

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<thead>
<tr>
<th>Component</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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</tbody>
</table>

**California Prop. 65 Components**

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

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<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Revision Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methylene chloride</td>
<td>75-09-2</td>
<td>2007-09-28</td>
</tr>
</tbody>
</table>
16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Carc.  Carcinogenicity
Eye Irrit.  Eye irritation
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 through prolonged or repeated exposure if swallowed.

Skin Irrit.  Skin irritation
STOT RE  Specific target organ toxicity - repeated exposure
STOT SE  Specific target organ toxicity - single exposure

HMIS Rating
Health hazard:  2
Chronic Health Hazard:  *
Flammability:  0
Physical Hazard  0

NFPA Rating
Health hazard:  2
Fire Hazard:  0
Reactivity Hazard:  0

Disclaimer
The information presented is believed to be correct and is the most accurate information available to us at this time. However, Ladd Research makes no warranty, express or implied, and assumes no liability for this information and the product described herein.

Preparation Date: 4-14-2020