
 <p><b>CHEMLABS</b> Quality Our Forte</p>	<p><b>LEONID CHEMICALS PVT. LTD., BANGALORE</b></p> <p>An ISO-9001:2008 Certified Company</p> <p>Quality Assurance Department</p>	<p>(CODE) DOCUMENT : WI (CODE) SECTION : W/SM (DATE) : 01.04.2011</p>	 <p>Issue : 02 Rev.: 00</p>
<p>Title: MATERIAL SAFETY DATA SHEET (MSDS): DICHLOROMETHANE</p>			<p>1   Page of 1</p>

## SECTION 1- CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MSDS Name:  
Dichloromethane

Synonyms:  
Methylene chloride

CAS No:  
75-09-2

Molecular Weight:  
84.93

Chemical Formula:  
CH<sub>2</sub>Cl<sub>2</sub>

Product Codes:  
D004

Company Information:  
LEONID CHEMICALS Pvt Ltd,  
62/A-2, 1<sup>st</sup> Stage,  
Yeshvanthpur Industrial Suburb,  
Asoka puram School Road,  
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Ph- +91-80-23378354  
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## SECTION 2- COMPOSITION, INFORMATION ON INGREDIENTS

Ingredient : Methylene Chloride  
CAS No : 75-09-2  
% : 99.5% (AR) (Dried), Min 99% (LR), 99.7% (HPLC)  
Hazardous : Yes



## SECTION 3- HAZARDS IDENTIFICATION

### EMERGENCY OVERVIEW

WARNING! Harmful if swallowed, inhaled or absorbed through skin. Affects central nervous system, liver, cardiovascular system, and blood. Causes irritation to skin, eyes and respiratory tract. Suspect cancer hazard. May cause cancer.

Risk of cancer depends on level and duration of exposure

SAF-T-DATA<sup>(tm)</sup> Ratings (Provided here for your convenience)

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Health Rating : 3 - Severe (Cancer Causing)  
 Flammability Rating : 1 - Slight  
 Reactivity Rating : 2 - Moderate  
 Contact Rating : 3 - Severe Lab  
 Protective Equip : GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD; PROPER GLOVES  
 Storage Color Code : Blue (Health)

### Potential Health Effects

#### Inhalation:

Causes irritation to respiratory tract. Has a strong narcotic effect with symptoms of mental confusion, light-headedness, fatigue, nausea, vomiting and headache. Causes formation of carbon monoxide in blood which affects cardiovascular system and central nervous system. Continued exposure may cause increased light-headedness, staggering, unconsciousness, and even death. Exposure may make the symptoms of angina (chest pains) worse

#### Ingestion:

May cause irritation of the gastrointestinal tract with vomiting. If vomiting results in aspiration, chemical pneumonia could follow. Absorption through gastrointestinal tract may produce symptoms of central nervous system depression ranging from light headedness to unconsciousness.

#### Skin Contact:

Causes irritation, redness and pain. Prolonged contact can cause burns. Liquid degrades the skin. May be absorbed through skin.

#### Eye Contact:

Vapors can cause eye irritation. Contact can produce pain, inflammation and temporal eye damage.

#### Chronic Exposure:

Can cause headache, mental confusion, depression, liver effects, kidney effects, bronchitis, loss of appetite, nausea, lack of balance, and visual disturbances. Can cause dermatitis upon prolonged skin contact. Methylene chloride may cause cancer in humans.

#### Aggravation of Pre-existing Conditions:

Persons with pre-existing skin disorders, eye problems, impaired liver, kidney, respiratory or cardiovascular function may be more susceptible to the effects of this substance.

### SECTION 4- FIRST AID MEASURES



#### Inhalation:

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

#### Ingestion:

If swallowed, do not induce vomiting. Give large quantities of water. Never give anything by mouth to an unconscious person. Get medical attention immediately.

#### Skin Contact:

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Immediately flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

**Eye Contact:**

Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

**SECTION 5- FIRE FIGHTING MEASURES**

**Fire:**

Autoignition temperature: 556°C (1033F)

**Flammable limits in air % by volume:**

l<sub>el</sub>: 12; u<sub>el</sub>: 23

Forms flammable vapor-air mixtures above 100°C (212F).

**Explosion:**

Concentrated can be ignited by a high intensity ignition source. Vapor may form flammable mixture in atmosphere that contains a high percentage of oxygen. Sealed containers may rupture when heated.

**Fire Extinguishing Media:**

Dry chemical, foam or carbon dioxide. Water spray may be used to keep fire exposed containers cool.

**Special Information:**



In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full face piece operated in the pressure demand or other positive pressure mode. Combustion by-products include phosgene and hydrogen chloride gases. Structural firefighters' clothing provides only limited protection to the combustion products of this material.

**SECTION 6- ACCIDENTAL RELEASE MEASURES**

Ventilate area of leak or spill. Remove all sources of ignition. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Use non-sparking tools and equipment. Collect liquid in an appropriate container or absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer! US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.

**SECTION 7 - HANDLING AND STORAGE**

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Isolate from any source of heat or ignition. Outside or detached storage is recommended. Containers of this material may be hazardous when empty since they retain

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product residues (vapors, liquid); observe all warnings and precautions listed for the product. To minimize decomposition, all storage containers should be galvanized or lined with a phenolic coating. This material may corrode plastic and rubber. Wear special protective equipment (Sec. 8) for maintenance break-in or where exposures may exceed established exposure levels. Wash hands, face, forearms and neck when exiting restricted areas. Shower, dispose of outer clothing, change to clean garments at the end of the day. Avoid cross-contamination of street clothes. Wash hands before eating and do not eat, drink, or smoke in workplace. Odor Threshold: 205 - 307 ppm. The odor threshold only serves as a warning of exposure; not smelling it does not mean you are not being exposed.

## SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION

### Airborne Exposure Limits:

Methylene Chloride (Dichloromethane):- OSHA Permissible Exposure Limit (PEL) 25 ppm (TWA), 125 ppm (STEL), 12.5 ppm (8-hour TWA - Action Level) - ACGIH Threshold Limit Value (TLV) - 50 ppm (TWA), A3 - suspected human carcinogen.

### Ventilation System:

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

### Personal Respirators (NIOSH Approved):

If the exposure limit is exceeded, wear a supplied air, full-face piece respirator, airlined hood, or full-face piece self-contained breathing apparatus. The cartridges recommended for this material have a predicted service of less than 30 minutes at concentrations of ten times (10x) the exposure limits. Actual service life will vary considerably, depending on concentration levels, temperature, humidity, and work rate. This substance has poor warning properties.

### Skin Protection:

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact. Neoprene is a recommended material for personal protective equipment. Natural rubber and polyvinyl chloride ARE NOT recommended materials for personal protective equipment.

### Eye Protection:



Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area

### Other Control Measures:

Do not use closed circuit re breathing system employing soda lime or other carbon dioxide absorber because of formation of toxic compounds capable of producing cranial nerve paralysis. See OSHA Standard for medical surveillance, record keeping, and reporting requirements for methylene chloride (29 CFR 1910.1052).

## SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

**Appearance** : Clear, colorless liquid.

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**Odor** : Chloroform-like odor.  
**Solubility** : 1.32 gm/100 gm water @ 20°C.  
**Specific Gravity** : 1.318 @ 25°C  
**pH** : No information found.  
**% Volatiles by volume @ 21°C (70F):** 100  
**Boiling Point** : 39.8°C (104F)  
**Melting Point** : -97C (-143F)  
**Vapor Density (Air=1)** : 2.9  
**Vapor Pressure (mm Hg)** : 350 @ 20°C (68F)  
**Evaporation Rate (BuAc=1):** 27.5  
**Molecular formula** : CH<sub>2</sub>Cl<sub>2</sub>  
**Molecular weight** : 84.93

#### SECTION 10 - STABILITY AND REACTIVITY

##### Stability:

Stable under ordinary conditions of use and storage.

##### Hazardous Decomposition Products

Emits highly toxic fumes of phosgene when heated to decomposition. Decomposes in a flame or hot surface to form toxic gas phosgene and corrosive mists of hydrochloric acid. Carbon dioxide and carbon monoxide may form when heated to decomposition.

##### Hazardous Polymerization:

Will not occur.

##### Incompatibilities:

Strong oxidizers, strong caustics, plastics, rubber, nitric acid, water + heat, and chemically active metals, such as aluminum and magnesium powder, sodium, potassium, and lithium. Avoid contact with open flames and electrical arcs. Liquid methylene chloride will attack some forms of plastics, rubber, and coatings.

##### Conditions to Avoid:

Moisture, heat, flames, ignition sources and incompatibles.

#### SECTION 11 - TOXICOLOGICAL INFORMATION

##### Toxicological Data:

Dichloromethane: Oral rat LD50: 1600 mg/kg; inhalation rat LC50: 52 gm/m<sup>3</sup>; investigated as a tumorigen, mutagen, reproductive effector.



##### Reproductive Toxicity:

Dichloromethane has been linked to spontaneous abortions in humans.

##### NTP Carcinogen

**Ingredient** : Methylene Chloride (75-09-2)  
**Known** : No  
**Anticipated** : Yes  
**IARC Category:** 2B



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## SECTION 12 - ECOLOGICAL INFORMATION

### Environmental Fate:

When released into the soil, this material may leach into groundwater. When released into the soil, this material is expected to quickly evaporate. When released into water, this material may biodegrade to a moderate extent. When released to water, this material is expected to quickly evaporate. This material has a log octanol-water partition coefficient of less than 3.0. This material is not expected to significantly bioaccumulate. When released into the air, this material may be moderately degraded by reaction with photo chemically produced hydroxyl radicals. When released into the air, this material is expected to have a half-life of greater than 30 days. When released into the air, this material may be removed from the atmosphere to a moderate extent by wet deposition.

### Environmental Toxicity:

The LC50/96-hour values for fish are over 100 mg/l. This material is not expected to be toxic to aquatic life.

## SECTION 13 - DISPOSAL CONSIDERATIONS

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved incinerator or disposed in a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

## SECTION 14 - TRANSPORT INFORMATION

### Domestic (Land, D.O.T.)

Proper Shipping Name : DICHLOROMETHANE  
Hazard Class : 6.1  
UN/NA : Un1593  
Packing Group : III  
Information reported for product/size: 52L

### International (Water, I.M.O.)

Proper Shipping Name : DICHLOROMETHANE  
Hazard Class : 6.1  
UN/NA : Un1593  
Packing Group : III  
Information reported for product/size: 52L

### International (Air, I.C.A.O.)

Proper Shipping Name : DICHLOROMETHANE  
Hazard Class : 6.1

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UN/NA : Un1593  
Packing Group : III  
Information reported for product/size: 52L

**SECTION 15 - REGULATORY INFORMATION**

**Chemical Inventory Status - Part 1**

Ingredient : Methylene Chloride (75-09-2)  
TSCA : Yes  
EC : Yes  
Japan : Yes  
Australia : Yes

**Chemical Inventory Status - Part 2**

Ingredient : Methylene Chloride (75-09-2)

**Canada**

Korea : Yes  
DSL : Yes  
NDSL : No  
Phil : Yes

**Federal, State & International Regulations - Part 1**

Ingredient : Methylene Chloride (75-09-2)

**SARA 302**

RQ : No  
TPQ : No

**SARA 313**

List : Yes  
Chemical Catg: No

**Federal, State & International Regulations - Part 2**

Ingredient : Methylene Chloride (75-09-2)  
CERCLA : 1000

**RCRA**

261.33: U080



**TSCA**

8(d): No

Chemical Weapons Convention: No TSCA 12(b): No CDTA: No  
SARA 311/312 : Acute: Yes Chronic: Yes Fire: No Pressure: No  
Reactivity : No (Pure / Liquid)

**WARNING:**

THIS PRODUCT CONTAINS A CHEMICAL(S) KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER.

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Australian Hazchem Code : 2Z  
Poison Schedule : S5

**WHMIS:**


This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

**SECTION 16 - OTHER INFORMATION**

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Leonid Chemicals Pvt. Ltd. be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, however arising, even if Leonid Chemicals Pvt. Ltd. has been advised of the possibility of such damages.


  
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		(CODE) SECTION : D004	
Title: SPECIFICATION MANUAL - DICHLOROETHANE			Issue : 02 Rev.: 00 1   Page of 1

### Specification manual - Dichloromethane

CH<sub>2</sub>Cl<sub>2</sub>

MW: 84.93

**Product** : Dichloromethane LR Grade  
**Description** : Clear liquid  
**Cat No** : D004  
**Prepared Date** : 07.03.2004  
**Approved Date** : 07.03.2005

REVISION HISTORY			
Issue/Rev	Description of Change	Author	Effective Date
01/00	Initial Release	S. Paul Joshua	07.03.2005
02/00	Reviewed no changes	S. Paul Joshua	01.04.2011
Next Review Due :	02.04.2015		
To be reviewed by :	Head-QC/QA		

Sl. No.	Tests	Specification
		LR
1	Assay (GC)	Min 98%
2	Water (H <sub>2</sub> O)	0.1%
3	Boiling range	38°C - 41°C

Approved By: S.Paul Joshua, Head Quality Control and Quality Assurance