

# Methylene chloride



## Section 1: Chemical Product and Company Identification

**Product Name:** Dichloromethane

Catalog Codes: 124

Synonym: Dichloromethane; Methane dichloride; Methylene bichloride; Methylene dichloride; MDC; DCM.

Chemical Name: Methylene chloride

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

**Contact Information:**

Expresolv Ltd.

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CIN No.: U51909GJ2016PLC092972

## Section 2: Composition and Information on Ingredients

**Composition:**

Name	CAS No.	% by Weight
Methylene chloride	75-09-2	100%

**Toxicological Data on Ingredients:** Hazard Symbols: XN

**Risk Phrases:** 40

## Section 3: Hazards Identification

**Potential Acute Health Effects:**

Hazardous in case of skin contact (burning pain, itching, and redness), of eye contact (irritation, and possible eye burns), of ingestion, of inhalation. Slightly hazardous in case of skin contact (permeator).

**Potential Chronic Health Effects:**

Possible cancer hazard based on tests with laboratory animals. Prolonged or repeated skin contact may cause dermatitis. May cause fetal effects. The substance may be toxic to skin, central nervous system (CNS). Repeated or prolonged exposure to the substance can produce target organs damage.

## Section 4: First Aid Measures

**Eye Contact:**

Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Cold water may be used. Get medical attention.

**Skin Contact:**

In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

**Serious Skin Contact:**

Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

**Inhalation:**

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

**Serious Inhalation:**

Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek medical attention.

**Ingestion:**

Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

**Serious Ingestion:**

Not available.

**Section 5: Fire and Explosion Data**

**Flammability of the Product:** Flammable.

**Auto-Ignition Temperature:** 556°C (1033°F)

**Flash Points:** None, but can form flammable vapour-air mixtures above ~100°C.

**Flammable Limits:**

Not available

**Products of Combustion:**

These products are carbon oxides (CO, CO<sub>2</sub>).

**Fire Hazards in Presence of Various Substances:**

Extremely flammable in presence of open flames and sparks, of heat. Slightly flammable to flammable in presence of oxidizing materials, of acids.

**Explosion Hazards in Presence of Various Substances:**

Risks of explosion of the product in presence of mechanical impact: Not available. Highly explosive in presence of open flames and sparks, of heat. Slightly explosive in presence of oxidizing materials.

**Fire Fighting Media and Instructions:**

Flammable liquid, soluble or dispersed in water. SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use alcohol foam, water spray or fog. Cool containing vessels with water jet in order to prevent pressure build-up, autoignition or explosion.

**Special Remarks on Fire Hazards:**

Highly flammable. Will be easily ignited by heat, sparks, and flames. Vapours may travel to source of ignition and flash back. Most vapours are heavier than air. Burns with Smokey greenish flame. Violent reaction or ignition on contact with halogens (e.g., bromine, chlorine), interhalogens (e.g., iodine heptafluoride), oxidants (e.g., silver perchlorate, nitrosyl perchlorate, nitryl perchlorate, chromyl chloride, fluorine nitrate, permanganic acid, nitric acid, hydrogen peroxide, peroxodisulfuric acid, iodine (VII) oxide, sodium peroxide, ozone, and liquid air), sulfur and sulfur compounds (e.g., sulfur when dried with peroxidised ether, sulfur chloride).

**Special Remarks on Explosion Hazards:**

Vapours may form explosive mixtures with air. Vapor explosion hazard indoors, outdoors, or in sewers. Run off to sewer may create a fire or explosion hazard. Containers may explode when heated. Tends to form explosive peroxides under influence of light and air and evaporated to dryness. Explosive reaction

with boron triazide, bromine trifluoride, bromine pentafluoride, perchloric acid, uranyl nitrate + light, wood pulp extracts + heat. Only electrical equipment of explosion proof type (group C classification) is permitted to be operated in other areas. May explode when brought in contact with anhydrous nitric acid.

## Section 6: Accidental Release Measures

### Small Spill:

Absorb spill with inert material (e.g. vermiculite, sand), and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container.

### Large Spill:

Flammable liquid. Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Do not touch spilled material. Prevent entry into sewers, basements or confined areas; dike if needed. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

## Section 7: Handling and Storage

### Precautions:

Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe gas/fumes/ vapor/spray. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents, acids, moisture.

### Storage:

Store in a segregated and approved area. Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame). Do not store above 30°C (86°F). Hygroscopic; keep container tightly closed. Air Sensitive to light.

## Section 8: Exposure Controls/Personal Protection

### Engineering Controls:

Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapours below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

### Personal Protection:

Splash goggles. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

### Personal Protection in Case of a Large Spill:

Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

### Exposure Limits:

TWA: 40 (ppm) from OSHA (PEL) [United States] TWA: 400 STEL: 500 CEIL: 500 (ppm) from ACGIH (TLV) [United States] TWA: 1200 STEL: 1520 CEIL: 1500 (mg/m<sup>3</sup>) from ACGIH (TLV) [United States] STEL: 500 (ppm)

## Section 9: Physical and Chemical Properties

**Physical State:** Liquid

**Appearance:** colourless

**Odour:** ethereal odour - chloroform-like

**pH:** Not available.

**Vapor Pressure:** 350 mm Hg @ 20°C

**Vapor Density:** 2.93 (Air=1)

**Evaporation Rate:** Not available.

**Viscosity:** Not available.

**Boiling Point:** 40° C

**Freezing/Melting Point:** -97° C

**Decomposition Temperature:** Not available.

**Solubility:** Slightly soluble.

**Specific Gravity/Density:** 1.33 (Water=1)

**Molecular Formula:** CH<sub>2</sub>Cl<sub>2</sub>

**Molecular Weight:** 84.92

## Section 10: Stability and Reactivity Data

### Chemical Stability:

Stable at room temperature in closed containers under normal storage and handling conditions. May form explosive mixtures in atmospheres having high oxygen content.

### Conditions to Avoid:

Excess heat, attacks some plastics, rubber, and coatings, confined spaces, when no water is present, Methylene chloride is not corrosive to metals. At high temperatures and in the presence of water (causing slow decomposition forming HCl), corrosion of iron, some stainless steels, copper and aluminium can occur.

### Incompatibilities with Other Materials:

Strong oxidizing agents, strong bases, chemically active metals.

### Hazardous Decomposition Products:

Hydrogen chloride, phosgene, carbon monoxide, carbon dioxide.

**Hazardous Polymerization:** Will not occur.

## Section 11: Toxicological Information

**CAS#:** 75-09-2: PA8050000

**LD50/LC50:** CAS# 75-09-2: Draize test, rabbit, eye: 162 mg Moderate; Draize test, rabbit, eye: 10 mg Mild; Draize test, rabbit, eye: 500 mg/24H Mild; Draize test, rabbit, skin: 810 mg/24H Severe; Draize test, rabbit, skin: 100 mg/24H Moderate; Inhalation, mouse: LC50 = 14400 ppm/7H; Inhalation, rat: LC50 = 52 gm/m<sup>3</sup>; Oral, mouse: LD50 = 873 mg/kg; Oral, rat: LD50 = 1600 mg/kg;

**Carcinogenicity:** CAS# 75-09-2:

**ACGIH:** A3 - Confirmed animal carcinogen with unknown relevance to humans

**California:** carcinogen, initial date 4/1/88

**NIOSH:** potential occupational carcinogen

**NTP:** Suspect carcinogen

**OSHA:** Possible Select carcinogen

**IARC:** Group 2B carcinogen

**Epidemiology:**

There are few reports of injury despite widespread use of Methylene chloride (ACGIH, 1991). Solvent abuse has led to death (Harbison, 1998).

**Teratogenicity:**

Inhalation, rat: TLo = 4500 ppm/24H (female 1-17-day(s) after conception) Effects on new-born - behavioural.; Inhalation, rat: TLo = 1250 ppm/7H (female 6-15 day(s) after conception) Specific Developmental Abnormalities - musculoskeletal system and urogenital system.

**Reproductive Effects:**

Reproductive effects have occurred in experimental animals.

**Neurotoxicity:**

No information available.

**Mutagenicity:**

DNA inhibition: Human, Fibroblast = 5000 ppm/1H (Continuous).; Morphological transformation: Rat, Embryo = 160 umol/L.; DNA damage: Oral, rat = 1275 mg/kg.; Inhalation, mouse: TLo = 2000 ppm/5H/2Y-C (Tumorigenic - Carcinogenic by RTECS criteria--Lungs, Thorax, or Respiration - Tumours).

**Other Studies:** See actual entry in RTECS for complete information.

**Special Remarks on other Toxic Effects on Humans:**

Acute Potential Health Effects: Skin: Causes skin irritation. It is not appreciably absorbed through intact skin. Eyes: Causes eye irritation. Can cause slight, reversible eye injury from contact with liquid or vapor. Inhalation: It is rapidly absorbed through lungs. Vapor mist causes irritation of the respiratory tract and mucous membranes. Affects behaviour, sense organs, peripheral and central nervous systems, liver and metabolism, cardiovascular system. Symptoms may include excitement, drowsiness, headache, nausea, vomiting, paleness, decreased pulse and temperature, irregular respiration, coughing, bronchodilation, increase in respiratory rate, increase in heart rate, excessive salivation, muscle relaxation, anesthetic effects, and possible kidney irritation or injury, and temporarily abnormal liver function tests. Ingestion: May be harmful if swallowed. May cause gastrointestinal tract irritation with nausea, vomiting.

## Section 12: Ecological Information

**Ecotoxicity:**

Not Available

**BOD5 and COD:**

Not available.

**Products of Biodegradation:**

Possibly hazardous short-term degradation products are not likely. However, long term degradation products may arise.

**Toxicity of the Products of Biodegradation:**

The products of degradation are less toxic than the product itself.

**Special Remarks on the Products of Biodegradation:**

WHEN RELEASED INTO THE SOIL, THIS MATERIAL IS EXPECTED TO QUICKLY EVAPORATE. WHEN RELEASED INTO THE SOIL, THIS MATERIAL IS EXPECTED TO LEACH INTO GROUNDWATER. WHEN RELEASED INTO THE SOIL, THIS MATERIAL IS NOT EXPECTED TO BIODEGRADE. WHEN RELEASED INTO WATER, THIS MATERIAL IS NOT EXPECTED TO BIODEGRADE. WHEN RELEASED INTO THE WATER, THIS MATERIAL IS EXPECTED TO HAVE HALFLIFE OF LESS THAN 1 DAY. WHEN RELEASED TO WATER, THIS MATERIAL IS EXPECTED TO QUICKLY EVAPORATE. THIS MATERIAL IS NOT EXPECTED TO SIGNIFICANTLY BIOACCUMULATE. THIS MATERIAL HAS

A LOG OCTANOL-WATER PARTITION COEFFICIENT LESS THAN 3.0. WHEN RELEASED INTO THE AIR, THIS MATERIAL IS EXPECTED TO BE READILY DEGRADED BY REACTION WITH PHOTOCHEMICALLY PRODUCED HYDROXYL RADICALS. WHEN RELEASED INTO THE AIR, THIS MATERIAL IS NOT EXPECTED TO BE DEGRADED BY PHOTOLYSIS. WHEN RELEASED INTO THE AIR, THIS MATERIAL IS EXPECTED TO HAVE HALF-LIFE BETWEEN 1 AND 10 DAYS.

### Section 13: Disposal Considerations

#### Waste Disposal:

Consult with Local and Regional (State) authorities (waste regulators). Waste must be disposed of in accordance with federal, state and local environmental control regulations.

### Section 14: Transport Information

#### DOT Classification:

Class 3: Flammable liquid.

**Identification:** Methylene chloride UNNA: 1593 PG: III

**Special Provisions for Transport:** Not available.

### Section 15: Other Regulatory Information

#### US FEDERAL:

##### TSCA:

Methylene chloride is listed on the TSCA inventory.

##### Health & Safety Reporting List:

Methylene chloride: Effective 10/4/82; Sunset 10/4/92

##### Chemical Test Rules:

None of the chemicals in this product are under a Chemical Test Rule.

##### Section 12b:

None of the chemicals are listed under TSCA Section 12b.

##### TSCA Significant New Use Rule:

None of the chemicals in this material have a SNUR under TSCA.

##### SARA:

##### CERCLA Hazardous Substances and corresponding RQs:

Methylene chloride: 1000 lb final RQ; 454 kg final RQ

##### SARA Section 302 Extremely Hazardous Substances:

None of the chemicals in this product have a TPQ.

##### SARA Codes:

Methylene chloride: acute, chronic.

##### Section 313:

This material contains Methylene chloride (CAS# 75-09-2, 99.5%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

##### Clean Air Act:

Methylene chloride is listed as a hazardous air pollutant (HAP). This material does not contain any Class 1 Ozone depletors. This material does not contain any Class 2 Ozone depletors.

**Clean Water Act:**

None of the chemicals in this product are listed as Hazardous Substances under the CWA. Methylene chloride is listed as a Priority Pollutant under the Clean Water Act. Methylene chloride is listed as a Toxic Pollutant under the Clean Water Act.

**OSHA:**

None of the chemicals in this product are considered highly hazardous by OSHA.

**STATE:**

Methylene chloride can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

**The following statement(s) is(are) made in order to comply with the California Safe Drinking Water Act:****WARNING:**

This product contains Methylene chloride, a chemical known to the state of California to cause cancer. California No Significant Risk Level: Methylene chloride: 200 #g/day NSRL (inhalation); 50 #g/day NSRL (except inhalation)

**European/International Regulations:****European Labelling in Accordance with EC Directives:****Hazard Symbols:** XN**Risk Phrases:**

R 40 Limited evidence of a carcinogenic effect.

**Safety Phrases:**

S 23 Do not inhale gas/fumes/vapour/spray. S 24/25 Avoid contact with skin and eyes. S 36/37 Wear suitable protective clothing and gloves.

**WGK (Water Danger/Protection):**

Methylene chloride

**Canada - DSL/NDSL:**

Methylene chloride is listed on Canada & #039; s DSL List.

**Canada - WHMIS:**

This product has a WHMIS classification of D1B, D2A.

**Canadian Ingredient Disclosure List:**

Methylene chloride is listed on the Canadian Ingredient Disclosure List.

**Exposure Limits:**

Methylene chloride: OEL-AUSTRALIA:TWA 100 ppm (350 mg/m<sup>3</sup>);Carcinogen OEL- AUSTRIA:TWA 100 ppm (360 mg/m<sup>3</sup>) OEL-BELGIUM:TWA 50 ppm (174 mg/m<sup>3</sup>); Carcinogen OEL- ZECHOSLOVAKIA:TWA 500 mg/m<sup>3</sup>;STEL 2500 mg/m<sup>3</sup> OEL-DENMAR K:TWA 50 ppm (175 mg/m<sup>3</sup>);Skin; Carcinogen OEL-FINLAND:TWA 100 ppm (350 mg/m<sup>3</sup>);STEL 250 ppm (870 mg/m<sup>3</sup>) OEL-FRANCE:TWA 100 ppm (360 mg/m<sup>3</sup>);ST EL 500 ppm (1800 mg/m<sup>3</sup>) OEL-GERMANY:TWA100 ppm (360 mg/m<sup>3</sup>);Carcinogen n OEL-HUNGARY:STEL 10 mg/m<sup>3</sup>;Carcinogen OEL-JAPAN:TWA 100 ppm (350 mg /m<sup>3</sup>)OEL-THE NETHERLANDS:TWA 100 ppm (350 mg/m<sup>3</sup>);STEL 500 ppm OEL-TH E PHILIPINES:TWA 500 ppm (1740 mg/m<sup>3</sup>) OEL-POLAND:TWA 50 mg/m<sup>3</sup> OEL-RU SSIA:TWA 100 ppm; STEL 50 mg/m<sup>3</sup> OEL-SWEDEN:TWA 35 ppm (120 mg/m<sup>3</sup>);STEL 70 ppm (25 mg/m<sup>3</sup>);Skin OEL-SWITZERLAND:TWA 100 ppm (360 mg/m<sup>3</sup>);STEL 500 ppm OEL-THAILAND:TWA 500 mg/m<sup>3</sup>;STEL 1000 mg/m<sup>3</sup> OEL-TURKEY:TWA 50 0 ppm (1740 mg/m<sup>3</sup>) OEL-UNITED KINGDOM:TWA 100 ppm (350 mg/m<sup>3</sup>);STEL 25 0 ppm OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH TLV OEL I N NEW ZEALAND, SINGAPORE, VIETNAM check ACGI TLV

**Specific hazard:---**

**Protective Equipment:**

Gloves. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Splash goggles.

**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 Expresolv 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.

**Updated On: Updated On:** 01<sup>st</sup> June 2023.

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