Dichloromethane

SECTION 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product Description: Dichloromethane

Cat No. : 406920000; 406920010; 406920025; 406920250; 406925000
Synonyms Dichloromethane; DCM
CAS No 75-09-2
Molecular Formula C H2 Cl2

Supplier
UK entity/business name
Fisher Scientific UK
Bishop Meadow Road,
Loughborough, Leicestershire LE11 5RG, United Kingdom
General info; Tel: +44 (0)1509 231166

EU entity/business name
Acros Organics BVBA
Janssen Pharmaceuticalaan 3a, 2440 Geel, Belgium
General Info; Tel: +32-14-57 52 11 (info@acros.com)
Technical Support; Tel +32-14-56 56 00 (acros.techsupport@thermofisher.com)

Emergency Telephone Number
For information US call: 001-800-ACROS-01 / Europe call: +32 14 57 52 11
Emergency Number US:001-201-796-7100 / Europe: +32 14 57 52 99
CHEMTREC Tel. No.US:001-800-424-9300 / Europe:001-703-527-3887

E-mail address begel.sdsdesk@thermofisher.com

Recommended Use Laboratory chemicals.
Uses advised against

SECTION 2. HAZARD IDENTIFICATION

Classification of the substance or mixture

<table>
<thead>
<tr>
<th></th>
<th>Category 2</th>
<th>Category 2A</th>
<th>Category 2</th>
<th>Category 1</th>
<th>Category 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin Corrosion/Irritation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Serious Eye Damage/Eye Irritation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specific target organ toxicity - (single exposure)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specific target organ toxicity - (repeated exposure)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Emergency Overview
Causes skin irritation. Causes serious eye irritation. Suspected of causing cancer. Causes damage to organs. May cause drowsiness and dizziness. Causes damage to organs through prolonged or repeated exposure.
Signal Word Danger

**Hazard Statements**
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H351 - Suspected of causing cancer
H370 - Causes damage to organs
H336 - May cause drowsiness or dizziness
H372 - Causes damage to organs through prolonged or repeated exposure

**Precautionary Statements**
**Prevention**
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P264 - Wash face, hands and any exposed skin thoroughly after handling
P271 - Use only outdoors or in a well-ventilated area
P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P280 - Wear eye protection/ face protection

**Response**
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P308 + P313 - IF exposed or concerned: Get medical advice/attention
P332 + P313 - If skin irritation occurs: Get medical advice/attention
P362 + P364 - Take off contaminated clothing and wash it before reuse

**Storage**
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed

**Disposal**
P501 - Dispose of contents/container to an approved waste disposal plant

**Physical and Chemical Hazards**
None identified.

**Health Hazards**
Causes skin irritation. Causes serious eye irritation. Suspected of causing cancer. Causes damage to organs. May cause drowsiness or dizziness. Causes damage to organs through prolonged or repeated exposure.

**Environmental hazards**
Contains no substances known to be hazardous to the environment or not degradable in waste water treatment plants. Will likely be mobile in the environment due to its volatility. The product contains volatile organic compounds (VOC) which will evaporate easily from all surfaces.
Causes formation of carbon monoxide in the blood. Carbon monoxide may cause adverse effects on the cardiovascular system and the central nervous system.
Toxic to terrestrial vertebrates. Contains a known or suspected endocrine disruptor. Contains a substance on the National Authorities Endocrine Disruptor Lists.

---

**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS No</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methylene chloride</td>
<td>75-09-2</td>
<td>&gt;99.5</td>
</tr>
</tbody>
</table>

**Note**
Stabilised with Amylene (CAS 513-35-9)

---

**SECTION 4. FIRST AID MEASURES**
General Advice
If symptoms persist, call a physician.

Eye Contact
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

Skin Contact
Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician.

Inhalation
Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms occur.

Ingestion
Clean mouth with water and drink afterwards plenty of water.

Most important symptoms and effects
Difficulty in breathing. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting. Causes central nervous system depression. Continued or high exposures by inhalation will cause anaesthetic effects. This may result in a loss of consciousness and could prove fatal. Causes formation of carbon monoxide in the blood. Carbon monoxide may cause adverse effects on the cardiovascular system and the central nervous system.

Self-Protection of the First Aider
Use personal protective equipment as required.

Notes to Physician
Treat symptomatically. Symptoms may be delayed.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media
Water spray, carbon dioxide (CO2), dry chemical, alcohol-resistant foam.

Extinguishing media which must not be used for safety reasons
No information available.

Specific Hazards Arising from the Chemical
Thermal decomposition can lead to release of irritating gases and vapors. Keep product and empty container away from heat and sources of ignition.

Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions
Use personal protective equipment as required. Ensure adequate ventilation. Avoid breathing vapors or mists. Wear respiratory protection.

Environmental Precautions
Should not be released into the environment.

Methods for Containment and Clean Up
Soak up with inert absorbent material. Keep in suitable, closed containers for disposal.

Refer to protective measures listed in Sections 8 and 13.
SECTION 7. HANDLING AND STORAGE

Handling
Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation. Vapors are heavier than air and may spread along floors. Handle product only in closed system or provide appropriate exhaust ventilation. Reacts with aluminum and its alloys.

Storage
Keep containers tightly closed in a dry, cool and well-ventilated place. Do not store in aluminum containers.

Specific Use(s)
Use in laboratories

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

<table>
<thead>
<tr>
<th>Component</th>
<th>China</th>
<th>Taiwan</th>
<th>Hong Kong</th>
<th>The United Kingdom</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methylene chloride</td>
<td>TWA: 200 mg/m³</td>
<td>TWA: 50 ppm</td>
<td>TWA: 50 ppm</td>
<td>STEL: 200 ppm 15 min</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA: 174 mg/m³</td>
<td>TWA: 174 mg/m³</td>
<td>STEL: 706 mg/m³ 15 min</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Component</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>NIOSH IDLH</th>
<th>European Union</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methylene chloride</td>
<td>TWA: 50 ppm</td>
<td>(Vacated) TWA: 500 ppm</td>
<td>IDLH: 2300 ppm</td>
<td>TWA: 353 mg/m³ (15min)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Vacated) STEL: 2000 ppm</td>
<td></td>
<td>TWA: 100 ppm (15min)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Vacated) Ceiling: 1000 ppm</td>
<td></td>
<td>STEL: 706 mg/m³ (8h)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA: 25 ppm</td>
<td>STEL: 125 ppm</td>
<td>STEL: 200 ppm (8h)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Skin</td>
</tr>
</tbody>
</table>

Legend:
X - Listed '-' - Not Listed R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.

Monitoring methods
BS EN 14042:2003 Title Identifier: Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents. MDHS70 General methods for sampling airborne gases and vapours MDHS 88 Volatile organic compounds in air. Laboratory method using diffusive samplers, solvent desorption and gas chromatography MDHS 96 Volatile organic compounds in air - Laboratory method using pumped solid sorbent tubes, solvent desorption and gas chromatography

Exposure Controls

Engineering Measures
Use only under a chemical fume hood. Ensure that eyewash stations and safety showers are close to the workstation location. Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source.

Personal protective equipment

Eye Protection
Goggles (European standard - EN 166)

Hand Protection
Protective gloves

<table>
<thead>
<tr>
<th>Glove material</th>
<th>Breakthrough time</th>
<th>Glove thickness</th>
<th>EU standard</th>
<th>Glove comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Viton (R)</td>
<td>See manufacturers recommendations</td>
<td>-</td>
<td>EN 374</td>
<td>(minimum requirement)</td>
</tr>
</tbody>
</table>

Inspect gloves before use.
Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information)
Ensure gloves are suitable for the task: Chemical compatibility, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger
of cuts, abrasion. Remove gloves with care avoiding skin contamination.

**Skin and body protection**
Long sleeved clothing

**Respiratory Protection**
When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly.

**Large scale/emergency use**
Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

*Recommended Filter type:* low boiling organic solvent Type AX Brown conforming to EN371

**Small scale/Laboratory use**
Use a NIOSH/MSHA or European Standard EN 149:2001 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

*Recommended half mask:* Valve filtering: EN405; or; Half mask: EN140; plus filter, EN 141
When RPE is used a face piece Fit Test should be conducted

**Hygiene Measures**
Handle in accordance with good industrial hygiene and safety practice.

**Environmental exposure controls**
No information available.

### SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Appearance</strong></td>
<td>Colorless</td>
</tr>
<tr>
<td><strong>Physical State</strong></td>
<td>Liquid</td>
</tr>
<tr>
<td>Odor</td>
<td>sweet</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting Point/Range</td>
<td>-97 °C / -142.6 °F</td>
</tr>
<tr>
<td>Softening Point</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling Point/Range</td>
<td>39 °C / 102.2 °F</td>
</tr>
<tr>
<td>Flash Point</td>
<td>No data available</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Explosion Limits</td>
<td><strong>Lower</strong> 13 vol%</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>350 mbar @ 20°C</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>2.93</td>
</tr>
<tr>
<td>Specific Gravity / Density</td>
<td>1.33</td>
</tr>
<tr>
<td>Bulk Density</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Water Solubility</td>
<td>20 g/L (20°C)</td>
</tr>
<tr>
<td>Solubility in other solvents</td>
<td>No information available</td>
</tr>
<tr>
<td>Partition Coefficient (n-octanol/water)</td>
<td><strong>log Pow</strong></td>
</tr>
<tr>
<td>Component</td>
<td>Methylene chloride 1.25</td>
</tr>
<tr>
<td>Autoignition Temperature</td>
<td>556 °C / 1032.8 °F</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>0.42 mPas @ 25°C</td>
</tr>
<tr>
<td>Explosive Properties</td>
<td>No information available</td>
</tr>
<tr>
<td>Oxidizing Properties</td>
<td>No information available</td>
</tr>
</tbody>
</table>

**Molecular Formula**
C H2 Cl2

**Molecular Weight**
84.93
SECTION 10. STABILITY AND REACTIVITY

Stability
Stable under normal conditions. Decomposes on exposure to light.

Hazardous Reactions
Forms a detonable mixture with nitric acid.

Hazardous Polymerization
Hazardous polymerization does not occur.

Conditions to Avoid
Excess heat. Protect from direct sunlight.

Materials to avoid

Hazardous Decomposition Products

SECTION 11. TOXICOLOGICAL INFORMATION

Product Information

(a) acute toxicity:

<table>
<thead>
<tr>
<th>Component</th>
<th>LD50 Oral (Rat)</th>
<th>LD50 Dermal (Rat)</th>
<th>LC50 Inhalation (Rat)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methylene chloride</td>
<td>&gt; 2000 mg/kg</td>
<td>&gt; 2000 mg/kg</td>
<td>53 mg/L 6 h</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>76000 mg/m³ 4 h</td>
</tr>
</tbody>
</table>

(b) skin corrosion/irritation; Category 2

(c) serious eye damage/irritation; Category 2

(d) respiratory or skin sensitization;
   Respiratory Based on available data, the classification criteria are not met
   Skin Based on available data, the classification criteria are not met

(e) germ cell mutagenicity; Based on available data, the classification criteria are not met

(f) carcinogenicity; Category 2
   The table below indicates whether each agency has listed any ingredient as a carcinogen

<table>
<thead>
<tr>
<th>Component</th>
<th>EU</th>
<th>UK</th>
<th>Germany</th>
<th>IARC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methylene chloride</td>
<td></td>
<td></td>
<td></td>
<td>Group 2A</td>
</tr>
</tbody>
</table>

(g) reproductive toxicity; Based on available data, the classification criteria are not met

(h) STOT-single exposure; Category 3
   Results / Target organs Central nervous system (CNS)

(i) STOT-repeated exposure; Based on available data, the classification criteria are not met
   Target Organs None known.

(j) aspiration hazard; Based on available data, the classification criteria are not met

Other Adverse Effects
    Tumorigenic effects have been reported in experimental animals.

Symptoms / effects, both acute and delayed
    Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting: Causes central nervous system depression: Continued or high exposures by inhalation will cause anaesthetic effects. This may result in a loss of
consciousness and could prove fatal: Causes formation of carbon monoxide in the blood. Carbon monoxide may cause adverse effects on the cardiovascular system and the central nervous system.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity effects

<table>
<thead>
<tr>
<th>Component</th>
<th>Freshwater Fish</th>
<th>Water Flea</th>
<th>Freshwater Algae</th>
<th>Microtox</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methylene chloride</td>
<td>Pimephales promelas: LC50: 193 mg/L/96h</td>
<td>EC50: 140 mg/L/48h</td>
<td>EC50: &gt;660 mg/L/96h</td>
<td>EC50: 1 mg/L/24 h</td>
</tr>
</tbody>
</table>

Persistence and Degradability

Persistence
Persistence is unlikely, based on information available.

Bioaccumulative Potential
Bioaccumulation is unlikely

<table>
<thead>
<tr>
<th>Component</th>
<th>log Pow</th>
<th>Bioconcentration factor (BCF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methylene chloride</td>
<td>1.25</td>
<td>6.4 - 40 dimensionless</td>
</tr>
</tbody>
</table>

Mobility in soil
The product contains volatile organic compounds (VOC) which will evaporate easily from all surfaces. Will likely be mobile in the environment due to its volatility. Disperses rapidly in air.

Endocrine Disruptor Information
This product does not contain any known or suspected endocrine disruptors

Persistent Organic Pollutant
This product does not contain any known or suspected substance

Ozone Depletion Potential
This product does not contain any known or suspected substance

SECTION 13. DISPOSAL CONSIDERATIONS

Waste from Residues/Unused Products
Waste is classified as hazardous. Dispose of in accordance with the European Directives on waste and hazardous waste. Dispose of in accordance with local regulations.

Contaminated Packaging
Dispose of this container to hazardous or special waste collection point.

Other Information
Waste codes should be assigned by the user based on the application for which the product was used. Do not empty into drains.

SECTION 14. TRANSPORT INFORMATION

Road and Rail Transport

UN-No	UN1593
Proper Shipping Name	Dichloromethane
Hazard Class	6.1
Packing Group	III

IMDG/IMO

UN-No	UN1593
Proper Shipping Name	Dichloromethane
Hazard Class	6.1
Packing Group	III

IATA

UN-No	UN1593
**SAFETY DATA SHEET**

**Dichloromethane**

**Proper Shipping Name:** Dichloromethane  
**Hazard Class:** 6.1  
**Packing Group:** III  

**Special Precautions for User:** No special precautions required

### SECTION 15. REGULATORY INFORMATION

**International Inventories**

X = listed, China (IECSC), Europe (EINECS/ELINCS/NLP), U.S.A. (TSCA), Canada (DSL/NDSL), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), Korea (KECL).

<table>
<thead>
<tr>
<th>Component</th>
<th>The Inventory of Hazardous Chemicals (2015 Edition)</th>
<th>List of dangerous goods GB 12268-2012</th>
<th>TCSI</th>
<th>IECSC</th>
<th>EINECS</th>
<th>TSCA</th>
<th>DSL</th>
<th>PICCS</th>
<th>ENCS</th>
<th>ISHL</th>
<th>AICS</th>
<th>KECL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methylene chloride</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>200-838-9</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>KE-23893</td>
<td></td>
</tr>
</tbody>
</table>

**Note:** Stabilised with Amylene (CAS 513-35-9)

**National Regulations**

<table>
<thead>
<tr>
<th>Component</th>
<th>Toxic Chemical Substances Control Act</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methylene chloride</td>
<td>Class IV (25 wt%)</td>
</tr>
<tr>
<td>75-09-2 (&gt;99.5)</td>
<td></td>
</tr>
</tbody>
</table>

### SECTION 16. OTHER INFORMATION

**Creation Date:** 27-Jan-2010  
**Revision Date:** 21-Dec-2020  
**Revision Summary:** Not applicable.

**Training Advice**

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.  
Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.  
First aid for chemical exposure, including the use of eye wash and safety showers.  
Chemical incident response training.

**Legend**

- **CAS** - Chemical Abstracts Service  
- **EINECS/ELINCS** - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances  
- **PICCS** - Philippines Inventory of Chemicals and Chemical Substances  
- **IECSC** - Chinese Inventory of Existing Chemical Substances  
- **KECL** - Korean Existing and Evaluated Chemical Substances  
- **TCSI** - China Synthetic Chemical List  
- **IECSC** - Chinese Inventory of Existing Chemical Substances  
- **TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory  
- **DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List  
- **ENCS** - Japanese Existing and New Chemical Substances  
- **AICS** - Australian Inventory of Chemical Substances  
- **NZIoC** - New Zealand Inventory of Chemicals  
- **WEL** - Workplace Exposure Limit  
- **ACGIH** - American Conference of Governmental Industrial Hygienists  
- **DNEL** - Derived No Effect Level  
- **RPE** - Respiratory Protective Equipment  
- **LC50** - Lethal Concentration 50%  
- **NOEC** - No Observed Effect Concentration  
- **TWA** - Time Weighted Average  
- **IARC** - International Agency for Research on Cancer  
- **LD50** - Lethal Dose 50%  
- **EC50** - Effective Concentration 50%  
- **POW** - Partition coefficient Octanol:Water
PBT - Persistent, Bioaccumulative, Toxic

vPvB - very Persistent, very Bioaccumulative

ADR - European Agreement Concerning the International Carriage of Dangerous Goods by Road
IMO/IMDG - International Maritime Organization/International Maritime Dangerous Goods Code
OECD - Organisation for Economic Co-operation and Development
BCF - Bioconcentration factor

ICAO/IATA - International Civil Aviation Organization/International Air Transport Association
MARPOL - International Convention for the Prevention of Pollution from Ships
ATE - Acute Toxicity Estimate
VOC (volatile organic compound)

Key literature references and sources for data
https://echa.europa.eu/information-on-chemicals
Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of Safety Data Sheet