Chemical Safety Data Sheet MSDS / SDS

# Chloromethyl methyl ether SDS

Revision Date:2024-04-25 Revision Number:1



## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### Product identifier

Product name: Chloromethyl methyl ether

CAS: 107-30-2

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

Relevant identified uses: For R&D use only. Not for medicinal, household or other use.

Uses advised against: none

### Company Identification

Company: Chemicalbook.in

Address: 5 vasavi Layout Basaveswara Nilayam Pragathi Nagar Hyderabad, India -500090

Telephone: +91 9550333722

## SECTION 2: Hazards identification

### Classification of the substance or mixture

Flammable liquids, Category 2
Acute toxicity - Category 4, Oral

Acute toxicity - Category 4, Dermal
Acute toxicity - Category 4, Inhalation
Carcinogenicity, Category 1A

**GHS label elements, including precautionary statements**

Pictogram(s)

Signal word Danger

**Hazard statement(s)**

H225 Highly flammable liquid and vapour
H302 Harmful if swallowed
H312 Harmful in contact with skin
H332 Harmful if inhaled
H350 May cause cancer

**Precautionary statement(s)**

**Prevention**

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233 Keep container tightly closed.
P240 Ground and bond container and receiving equipment.
P241 Use explosion-proof [electrical/ventilating/lighting/...] equipment.
P242 Use non-sparking tools.
P243 Take action to prevent static discharges.
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...
P264 Wash ... thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P271 Use only outdoors or in a well-ventilated area.
P203 Obtain, read and follow all safety instructions before use.

**Response**

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse affected areas with water [or shower].
P370+P378 In case of fire: Use ... to extinguish.
P301+P317 IF SWALLOWED: Get medical help.
P330 Rinse mouth.

P302+P352 IF ON SKIN: Wash with plenty of water/...
P317 Get medical help.
P321 Specific treatment (see ... on this label).
P362+P364 Take off contaminated clothing and wash it before reuse.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P318 IF exposed or concerned, get medical advice.

### Storage

P403+P235 Store in a well-ventilated place. Keep cool.
P405 Store locked up.

### Disposal

P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

### Other hazards which do not result in classification

no data available

## SECTION 3: Composition/information on ingredients

### Substance

| | |
|---|---|
| Chemical name: | Chloromethyl methyl ether |
| Common names and synonyms: | Chloromethyl methyl ether |
| CAS number: | 107-30-2 |
| EC number: | 203-480-1 |
| Concentration: | 100% |

## SECTION 4: First aid measures

### Description of necessary first-aid measures

### If inhaled

Fresh air, rest. Half-upright position. Artificial respiration may be needed. Refer immediately for medical attention.

### Following skin contact

Remove contaminated clothes. Rinse skin with plenty of water or shower. Refer for medical attention .

### Following eye contact

Rinse with plenty of water (remove contact lenses if easily possible). Refer immediately for medical attention.

### Following ingestion

Rinse mouth. Do NOT induce vomiting. Refer immediately for medical attention.

### Most important symptoms/effects, acute and delayed

The principal effect is irritation. The liquid causes severe irritation of eyes and skin; and vapor exposure of 100 ppm is severely irritating to eyes and nose. This level is dangerous to life in 4 hours. Pulmonary edema or pneumonia may cause death. There was increased death rate from respiratory cancer among exposed victims and it is a regulated carcinogen. (EPA, 1998)

### Indication of immediate medical attention and special treatment needed, if necessary

Basic treatment: Establish a patent airway. Suction if necessary. Watch for signs of respiratory insufficiency and assist ventilations if necessary. Administer oxygen by nonrebreather mask at 10 to 15 L/min. Provide a low-stimulus environment. Monitor for shock and treat if necessary . Anticipate seizures and treat if necessary . For eye contamination, flush eyes immediately with water. Irrigate each eye continuously with normal saline during transport . Do not use emetics. For ingestion, rinse mouth and administer 5 mL/kg up to 200 mL of water for dilution if the patient can swallow, has a strong gag reflex, and does not drool . Treat frostbite by rapid rewarming . Ethers and related compounds

## SECTION 5: Firefighting measures

### Suitable extinguishing media

Extinguish with dry chemicals, foam or carbon dioxide. water may be ineffective on fire. cool exposed containers with water.

### Specific hazards arising from the chemical

Flammable/combustible material; may be ignited by heat, sparks, or flames. Vapors may travel to a source of ignition and flash back. Container may explode in heat of fire. In addition to the risk of explosion, when air mixtures of ether vapors are heated or exposed to flame or sparks, they tend to form peroxides. Ethers containing peroxides can detonate when heated. Unburned material may form powerful tear gas. When wet, also forms irritating formaldehyde gas. Evolves formaldehyde and hydrogen chloride. When heated to decomposition, it emits toxic fumes of chlorides. Avoid decomposing heat Hazardous polymerization may not occur. (EPA, 1998)

### Special protective actions for fire-fighters

Use dry powder. Water may be ineffective. In case of fire: keep drums, etc., cool by spraying with water.

## SECTION 6: Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Remove all ignition sources. Evacuate danger area! Consult an expert! Personal protection: complete protective clothing including self-contained breathing apparatus. Ventilation. Collect leaking liquid in sealable containers. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations. Do NOT wash away into sewer.

### Environmental precautions

Remove all ignition sources. Evacuate danger area! Consult an expert! Personal protection: complete protective clothing including self-contained breathing apparatus. Ventilation. Collect leaking liquid in sealable containers. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations. Do NOT wash away into sewer.

### Methods and materials for containment and cleaning up

Neutralizing agents for acids and caustics: Flood with water. Rinse with sodium bicarbonate or lime solution. Notify local health and pollution control agencies. Notify operators of nearby water intakes.

## SECTION 7: Handling and storage

### Precautions for safe handling

NO open flames, NO sparks and NO smoking. Closed system, ventilation, explosion-proof electrical equipment and lighting. Prevent build-up of electrostatic charges (e.g., by grounding). Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

### Conditions for safe storage, including any incompatibilities

Fireproof. Provision to contain effluent from fire extinguishing. Well closed. Separated from food and feedstuffs. Store in an area without drain or sewer access.Store at ambient temperature.

## SECTION 8: Exposure controls/personal protection

**Control parameters**

**Occupational Exposure limit values**

TLV: A2 (suspected human carcinogen).MAK: carcinogen category: 1

**Biological limit values**

no data available

**Appropriate engineering controls**

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

**Individual protection measures, such as personal protective equipment (PPE)**

**Eye/face protection**

Wear face shield or eye protection in combination with breathing protection.

**Skin protection**

Protective gloves. Protective clothing.

**Respiratory protection**

Use closed system and ventilation.

**Thermal hazards**

no data available

## SECTION 9: Physical and chemical properties and safety characteristics

| | |
|---|---|
| Physical state: | Methyl chloromethyl ether is a clear colorless liquid. Flash point -4°F. Irritates the eyes and respiratory system. Very toxic by inhalation and may be toxic by ingestion or skin absorption. Vapors are heavier than air. |
| Colour: | COLORLESS LIQ |
| Odour: | Irritating odor |

| | |
|---|---|
| Melting point/freezing point: | -103°C |
| Boiling point or initial boiling point and boiling range: | 55-59°C |
| Flammability: | Class IB Flammable Liquid: Fl.P. below 73°F and BP at or above 100°F. |
| Lower and upper explosion limit/flammability limit: | no data available |
| Flash point: | 15°C |
| Auto-ignition temperature: | see Notes |
| Decomposition temperature: | no data available |
| pH: | no data available |
| Kinematic viscosity: | no data available |
| Solubility: | Reacts with water (NIOSH, 2016) |
| Partition coefficient n-octanol/water: | no data available |
| Vapour pressure: | 3.55 psi ( 20 °C) |
| Density and/or relative density: | 1.06 |
| Relative vapour density: | 0.5245 lb/cu ft at 70 deg F |
| Particle characteristics: | no data available |

## SECTION 10: Stability and reactivity

### Reactivity

NIOSH considers chloromethyl methyl ether to be a potential occupational carcinogen.
On combustion, forms toxic gases including phosgene (see ICSC 0007) and hydrogen chloride (see ICSC 0163). Decomposes on contact with water. This produces hydrogen chloride and formaldehyde (see ICSC 0275). Attacks many metals in the presence of water.

### Chemical stability

Stable

### Possibility of hazardous reactions

A very dangerous fire hazard when exposed to heat or flame.The vapour is heavier than air and may travel along the ground; distant ignition possible. As a result of flow, agitation, etc., electrostatic charges can be generated.METHYL CHLOROMETHYL ETHER Is a halogenated ether. Ethers tend to form unstable peroxides when exposed to oxygen. Ethyl, isobutyl, ethyl tert-butyl, and ethyl tert-pentyl ether are particularly hazardous in this respect. Ether peroxides can sometimes be observed as clear crystals deposited on containers or along the surface of the liquid. Ethers can act as bases. They form salts with strong acids and addition complexes with Lewis acids. The complex between diethyl ether and boron trifluoride is an example. Ethers may react violently with strong oxidizing agents. In other reactions, which typically involve the breaking of the carbon-oxygen bond, ethers are relatively inert.

### Conditions to avoid

no data available

### Incompatible materials

Water [Note: Reacts with water to form hydrochloric acid & formaldehyde].

### Hazardous decomposition products

Decomp in hot ethanol

## SECTION 11: Toxicological information

### Acute toxicity

Oral: LD50 Rat oral 0.5 g/kg

Inhalation: LC50 Rat /inhalation/ 55 ppm/7 hr

Dermal: no data available

### Skin corrosion/irritation

no data available

### Serious eye damage/irritation

no data available

### Respiratory or skin sensitization

no data available

### Germ cell mutagenicity

no data available

### Carcinogenicity

CLASSIFICATION: A; human carcinogen. BASIS FOR CLASSIFICATION: The observation of an increased incidence of respiratory cancer in exposed workers and the observation of respiratory tumors in mice, rats, and hamsters exposed by inhalation forms the basis for this classification. HUMAN CARCINOGENICITY DATA: Sufficient.

### Reproductive toxicity

No information is available on the reproductive or developmental effects of chloromethyl methyl ether in humans or animals.

### STOT-single exposure

The substance is corrosive to the eyes, skin and respiratory tract. Inhalation may cause lung oedema, but only after initial corrosive effects on eyes and/or airways have become manifest. Medical observation is indicated.

### STOT-repeated exposure

This substance is carcinogenic to humans. Repeated or prolonged inhalation may cause effects on the lungs.

### Aspiration hazard

A harmful contamination of the air can be reached rather quickly on evaporation of this substance at 20°C.

## SECTION 12: Ecological information

### Toxicity

Toxicity to fish: no data available

Toxicity to daphnia and other aquatic invertebrates: no data available

Toxicity to algae: no data available

Toxicity to microorganisms: no data available

### Persistence and degradability

no data available

### Bioaccumulative potential

Hydrolysis half-lives are sufficiently fast (hydrolysis occurs in pure water with a half-life <1 sec(1)) to preclude any possibility of bioconcentration in the food chain(SRC).

### Mobility in soil

no data available

### Other adverse effects

no data available

## SECTION 13: Disposal considerations

### Disposal methods

### Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

### Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be

punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

## SECTION 14: Transport information

### UN Number

ADR/RID: UN1239 (For reference only, please check.)
IMDG: UN1239 (For reference only, please check.)
IATA: UN1239 (For reference only, please check.)

### UN Proper Shipping Name

ADR/RID: METHYL CHLOROMETHYL ETHER (For reference only, please check.)
IMDG: METHYL CHLOROMETHYL ETHER (For reference only, please check.)
IATA: METHYL CHLOROMETHYL ETHER (For reference only, please check.)

### Transport hazard class(es)

ADR/RID: 6.1 (For reference only, please check.)
IMDG: 6.1 (For reference only, please check.)
IATA: 6.1 (For reference only, please check.)

### Packing group, if applicable

ADR/RID: I (For reference only, please check.)
IMDG: I (For reference only, please check.)
IATA: I (For reference only, please check.)

### Environmental hazards

ADR/RID: No
IMDG: No
IATA: No

### Special precautions for user

no data available

**Transport in bulk according to IMO instruments**

no data available

## SECTION 15: Regulatory information

**Safety, health and environmental regulations specific for the product in question**

**European Inventory of Existing Commercial Chemical Substances (EINECS)**

Listed.

**EC Inventory**

Listed.

**United States Toxic Substances Control Act (TSCA) Inventory**

Listed.

**China Catalog of Hazardous chemicals 2015**

Listed.

**New Zealand Inventory of Chemicals (NZIoC)**

Listed.

**(PICCS)**

Listed.

**Vietnam National Chemical Inventory**

Listed.

**IECSC)**

Listed.

**Korea Existing Chemicals List (KECL)**

Listed.

## SECTION 16: Other information

**Abbreviations and acronyms**

CAS: Chemical Abstracts Service

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

RID: Regulation concerning the International Carriage of Dangerous Goods by Rail

IMDG: International Maritime Dangerous Goods

IATA: International Air Transportation Association

TWA: Time Weighted Average

STEL: Short term exposure limit

LC50: Lethal Concentration 50%

LD50: Lethal Dose 50%

EC50: Effective Concentration 50%

**References**

IPCS - The International Chemical Safety Cards (ICSC), website: http://www.ilo.org/dyn/icsc/showcard.home

HSDB - Hazardous Substances Data Bank, website: https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm

IARC - International Agency for Research on Cancer, website: http://www.iarc.fr/

eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en

CAMEO Chemicals, website: http://cameochemicals.noaa.gov/search/simple

ChemIDplus, website: http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp

ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: http://www.phmsa.dot.gov/hazmat/library/erg

Germany GESTIS-database on hazard substance, website: http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp

ECHA - European Chemicals Agency, website: https://echa.europa.eu/

**Other Information**

The auto-ignition temperature is unknown in the literature.Explosive limits are unknown in the literature.Do NOT use in the vicinity of a fire or a hot surface, or during welding.Check for peroxides prior to distillation; eliminate if found.TLV Note: Exposure by all

routes should be carefully controlled to levels as low as possible.

Disclaimer: 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. We as supplier shall not be held liable for any