



Lee & Man Chemical

Safety data sheet for chemical product

Chloromethane



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Chloromethane

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

Product name:

Chloromethane; Methyl chloride

Company name:

Jiangsu Lee & Man Chemical Company Limited / Jiangxi Lee & Man Chemical Company Limited

Address:

No. 6-2, Xinggang Road, Changshu Economic and Technological Development Zone, Jiangsu Province
Dock Industrial City, Jiujiang City, Jiangxi Province

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Enterprise emergency number:

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Recommended use:

Methyl chloride is an organic halide. Slightly soluble in water, easily soluble in chloroform, ether, ethanol and acetone. Used in the production of methylchlorosilane, tetramethyl lead, methyl cellulose, etc., a small amount is used in the production of quaternary ammonium compounds, pesticides, and used as a solvent in the production of isobutyl rubber; methyl chloride can also be used in the production of organosilicon compounds - methyl methacrylate Chlorosilane, and methylcellulose. It is also widely used as solvent, extractant, propellant, refrigerant, local anesthetic, methylating agent, and used in the production of pesticides, medicines, spices, etc.

Restricted use:

No relevant information was found.

SECTION 2: Hazards identification

Emergency Overview:

Extremely Flammable Gas, Contains Pressurized Gas: May explode if heated.

GHS Hazard Category:

Flammable gases, category 1;

Pressurized gas;

Specific target organ toxicity – repeated exposure, Category 2;

Aspiration hazard – Category 2;

Label elements:

Pictograms:



Warning word: Danger

Hazard Statements:

Extremely flammable gas, contains pressurized gas: may explode if heated, may cause damage to organs through prolonged or repeated exposure, may be harmful if swallowed and enters respiratory tract.

Precautionary Statements:

- Precaution
 - Keep away from heat, sparks, open flames, hot surfaces. No smoking.
 - Avoid breathing gas.
 - Operate only outdoors or in a well-ventilated place.
- Incident response
 - IF INHALED: Remove victim to fresh air and rest in a position comfortable for breathing. Get medical attention immediately. Take antidote immediately if needed.
 - The leaking gas catches fire; do not put out the fire unless the source of the leak can be safely cut off. Eliminate all sources of ignition if there is no danger. If you feel unwell, seek medical attention.
 - Collect spillage.
- Safe storage

-- Avoid sunlight and store in a well-ventilated place.

• Disposal

-- Dispose of this product, its contents and containers in accordance with national and local regulations.

Physical and chemical hazards:

It is extremely flammable, and its vapor can form an explosive mixture when mixed with air, which can cause combustion and explosion in case of open fire and high heat energy. In case of high heat, the internal pressure of the container will increase, and there is a danger of cracking and explosion.

Health Hazards:

Route of entry:

Inhalation, ingestion, percutaneous absorption

This product has stimulating and anesthetic effects, and can seriously damage the central nervous system, as well as the liver, kidney and testis. Acute poisoning: mild cases have headache, dizziness, nausea, vomiting, blurred vision, staggering gait, confusion, etc.; severe poisoning may cause delirium, agitation, convulsions, tremors, visual disturbances, coma, and ketones in the breath. Body odor and urine formate and ketone bodies are helpful in diagnosis. Skin contact can cause frostbite due to rapid evaporation of methyl chloride on body surfaces. Chronic effects: Long-term exposure to low concentrations may cause symptoms such as drowsiness, drowsiness, headache, paresthesia, emotional instability.

Environmental Hazards:

May be harmful to the environment.

SECTION 3: Composition/information on ingredients

Substance: ✓

Mixture: ✗

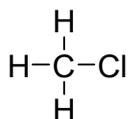
Main ingredient: Chloromethane

Molecular weight: 50.49

CAS-No.: 74-87-3

Formula: CH₃Cl

Structural formula:



SECTION 4: First aid measures

Inhalation:

Quickly leave the scene to fresh air. Keep the airway open. If breathing is difficult, give oxygen. Breathing, heartbeat stopped, immediately perform CPR. Seek medical attention.

Skin contact:

In case of frostbite: Soak the affected area in warm water maintained at 38-42° C to rewarm. Do not use hot water or radiant heat. Do not rub. Wrap with a clean, dry dressing. Seek medical attention.

Eye Contact:

Lift the eyelids and flush with running water or normal saline. Seek medical attention.

Ingestion:

Do not induce vomiting, do not feed anything from the mouth to an unconscious person, seek medical attention immediately with this SDS.

SECTION 5: Firefighting measures

Fire-fighting precautions and protective measures:

When a fire occurs in the surrounding area, the gas source should be cut off immediately. If the gas source cannot be cut off, it is not allowed to extinguish the flame at the leak. Firefighters must wear respirator, full-body fire-proof and anti-gas suits, and put out the fire in the upwind direction. Move containers from fire to open space if possible. Cool the container with water spray until the fire is over.

Extinguishing media:

Water mist, foam, carbon dioxide extinguishing.

Special hazards:

Mixed with air to form an explosive mixture, which will explode when it encounters sparks or high heat energy, and phosgene will be generated. Contact with aluminum and its alloys can generate pyrophoric aluminum compounds. In case of high heat, the internal pressure of the container will increase, and there is a danger of cracking and explosion.

Hazardous combustion products:

Carbon monoxide, carbon dioxide, hydrogen chloride, phosgene.

SECTION 6: Accidental release measures

Worker Precautions, Protective Equipment and Emergency Procedures:

Eliminate all sources of ignition. A warning area is delineated according to the influence area of vapor diffusion, and irrelevant personnel are evacuated to a safe area from the crosswind and upwind directions. It is recommended that emergency personnel wear fully enclosed chemical

protective clothing with built-in positive pressure self-contained breathing apparatus. If it is a liquefied gas leak, you should also pay attention to preventing frostbite. All equipment used during work should be grounded. Cut off sources of leaks as much as possible. Do not touch ruptured containers and spills without wearing appropriate protective clothing. If possible, invert the container so that it escapes gas rather than liquid. Spray water to suppress vapor or redirect vapor cloud flow to avoid contact with spillage. It is forbidden to directly impact the leakage or leakage source with water.

Environmental protection measures:

Prevent the diffusion of gas through sewers, ventilation systems and confined spaces.

Methods for containment and clean-up of spilled chemicals and disposal materials used:

Isolate the spill area until the gas has dissipated.

SECTION 7: Handling and storage

Handling:

Strictly closed, provide adequate local exhaust and general ventilation. Operators must undergo special training and strictly abide by operating procedures. It is recommended that operators wear filter respirators (half masks), chemical safety goggles, gas-penetrating respirators, and chemical-resistant gloves. Keep away from fire and heat sources, and smoking is strictly prohibited in the workplace. Use explosion-proof ventilation systems and equipment. Prevent gas leakage into workplace air. Avoid contact with oxidants. When handling, lightly load and unload to prevent damage to cylinders and accessories. Equipped with the corresponding variety and quantity of firefighting equipment and leakage emergency treatment equipment.

Storage:

Store in a cool, ventilated warehouse dedicated to toxic gases. Keep away from fire and heat sources. The storage temperature should not exceed 30°C. It should be stored separately from inflammables, combustibles and oxidants, and should not be mixed. Use explosion-proof lighting and ventilation facilities. Prohibit the use of mechanical equipment and tools that are prone to sparks. The storage area should be equipped with leakage emergency treatment equipment.

SECTION 8: Exposure controls/personal protection

Occupational Hygiene Exposure Limits:

China PC-TWA: 60 (mg/m³) ; PC-STEL: 120 (mg/m³)

U.S (ACGIH) TLV-TWA: 50ppm; TLV- STEL: 100ppm

Biological Exposure Limits:

No standard established.

Monitoring method:

Gas chromatography; biological monitoring method, no standard.

Engineering Controls:

Strictly closed, provide adequate local exhaust and general ventilation. Safety showers and eye wash facilities are provided.

Respiratory system protection:

When the concentration in the air exceeds the standard, wear a filter gas mask (half mask). Positive pressure self-contained breathing apparatus must be worn during emergency rescue or evacuation.

Hand Protection:

Wear chemical resistant gloves.

Eye Protection:

Wear chemical safety goggles.

Skin and body protection:

Gas-penetrating hazmat suit.

Other protection:

Smoking, eating and drinking are prohibited at the work site. After work, take a shower. Pay attention to personal hygiene.

SECTION 9: Physical and chemical properties

Appearance and properties: colorless gas

Odor: ether-like slightly sweet odor

pH value: meaningless

Melting point (° C): -97.6

Boiling point (° C): -23.7

Flash point (° C): -46

Upper explosion limit [% (V/V)]: 17.2

Lower explosion limit [% (V/V)]: 8.1

Saturated vapor pressure (kPa): 506.62 (22° C)

Relative vapor density (air=1): 1.8

Relative density (water=1): 0.996

Heat of combustion: -620.27

Viscosity (mPa s): 0.18 (20°C)

Solubility: slightly soluble in water, soluble in ethanol, chloroform, benzene, carbon tetrachloride, glacial acetic acid, etc.

Octanol/water partition coefficient: 0.91

Auto-ignition temperature (°C): 632

Critical temperature (° C): 143.8

Critical pressure (MPa): 6.68

SECTION 10: Stability and reactivity

Stability:

Stable

Hazardous (decomposition) products:

Hydrogen chloride, phosgene

Hazardous reaction:

Contact with incompatible substances such as strong oxidants and active metals may cause fire and explosion hazards

Conditions to avoid:

Humid air, static electricity, impact, high temperature, open flame

Incompatibility:

Strong oxidants, magnesium, potassium, sodium and their alloys, etc.

SECTION 11: Toxicological information

Acute toxicity:

LC50: Rat inhalation LC50: 5300 mg/m³ 4h.

Skin irritation or corrosion:

No information available.

Eye irritation or corrosion:

No information available.

Respiratory or skin sensitization:

No information available.

Germ cell mutagenicity:

Microbial mutagenicity: Salmonella typhimurium 2500ppm. Sister chromatid exchange: human lymphocytes 3 pph. Mammalian somatic mutation: human lymphocytes 5 pph. Unprogrammed DNA synthesis: rat liver 1 pph. Dominant lethal test: rats inhaled 3000 ppm for 6 hours a day for 5 days.

Carcinogenicity:

IARC Carcinogenicity Review: Group 3, the available evidence cannot classify human carcinogenicity. Insufficient evidence for human and animal and carcinogenicity.

Reproductive toxicity:

Inhalation of the lowest toxic dose (TCLo) of 1500 ppm/6h in rats 7 to 19 days after pregnancy can cause developmental malformations of the musculoskeletal system. Inhalation of the lowest toxic dose (TCLo) of 500 ppm/6h in mice 6 to 17 days after pregnancy caused developmental malformations of the cardiovascular system.

Specific target organ toxicity - single exposure:

No information available.

Specific target organ toxicity - repeated exposure:

No information available.

Aspiration Hazard:

No information available.

SECTION 12: Ecological information

Ecotoxicity:

LC50: 270 ppm (96h) (Moon silver fish, static); 550 ppm (96h) (Blue gill sunfish, static); IC50: 500-1450mg/L (72h) (algae).

Persistence and degradability:

Biodegradability: No data available; Non-biodegradability: In the air, when the concentration of hydroxyl radicals is $5.00 \times 10^5 / \text{cm}^3$, the degradation half-life is 310d (theoretical).

Bioaccumulation potential:

The bioaccumulation potential of this substance may be low as predicted by the Kow value.

Mobility in soil:

The substance may be susceptible to migration based on the Koc value prediction.

SECTION 13: Disposal considerations

Waste Chemicals:

Dispose of by controlled incineration. The hydrogen halide discharged from the incinerator is removed by an acid scrubber.

Contaminated Packaging:

Consult national and local regulations before returning containers to the manufacturer or disposing of them.

Disposal Precautions:

Please refer to relevant national and local regulations before disposal. Empty containers should be returned to the manufacturer or buried in a designated place.

SECTION 14: Transport information

United Nations Dangerous Goods Number (UN Number):1063

UN shipping name: Chloromethane

United Nations hazard class: Class 2.1

Packing class:-

Packaging logo:



Marine Pollutants: No

Packing method:

Steel gas cylinder; ordinary wooden box outside the ampoule; pressure (container) tank packaging.

Transportation Precautions:

The safety helmet on the cylinder must be worn when transporting in a cylinder. The cylinders are generally laid flat, and the bottle mouths should be in the same direction, and should not cross; the height should not exceed the guardrail of the vehicle, and be fastened with triangular wooden pads to prevent rolling. When transporting, the transport vehicle shall be equipped with fire-fighting equipment of the corresponding variety and quantity. The exhaust pipe of the vehicle carrying this item must be equipped with a flame arresting device, and it is prohibited to use mechanical equipment and tools that are prone to sparks for loading and unloading. It is strictly forbidden to mix and transport with oxidants, edible chemicals, etc. In summer, it should be transported in the morning and evening to prevent sunlight exposure. During the stopover, keep away from fire and heat sources. When transporting by road, it is necessary to drive according to the prescribed route, and it is forbidden to stay in residential areas and densely populated areas. It is forbidden to slip away during railway transportation.

SECTION 15: Regulatory information

The following laws, regulations and standards have made corresponding provisions on the safe use, storage, transportation, handling, classification and marking of this chemical:

Production Safety Law of the People's Republic of China;

Law of the People's Republic of China on the Prevention and Control of Occupational Diseases
Classification and Catalogue of Occupational Diseases: Not listed;

The Environmental Protection Law of the People's Republic of China;

Occupational exposure limits for hazardous agents in the workplace;

Regulations on the Safety Management of Hazardous Chemicals Catalogue of hazardous chemicals:

Listed. Inventory of explosive hazardous chemicals: not listed. List of Hazardous Chemicals under Key Supervision: Included. GB18218-2018 "Identification of Major Hazardous Sources of Hazardous Chemicals" (Table 2): Listed, flammable gas; critical amount (t) 10;

Labor Protection Regulations for Workplaces Using Toxic Substances List of Highly Toxic Substances: Not listed;

Regulations on the Administration of Precursor Chemicals Classification and Variety List of Precursor Chemicals: Not listed.

SECTION 16: Other information

References:

- (1) The latest practical manual for chemical dangerous goods;
- (2) Complete book on safety technology of hazardous chemicals;

Disclaimer:

The information in this SDS applies only to the specified product, unless otherwise specified, all substances in this product have unknown hazards and should be used with care. While certain hazards are described in this SDS, we do not guarantee that these are the only hazards. This SDS provides information on the safety of product use only for those users of this product who have received appropriate professional training. The relevant data is only used as a guide for safe handling, use, processing, storage, disposal and leakage, etc., and cannot be used as an indicator of guarantee and quality.