



Lee & Man Chemical

Safety data sheet for chemical product

Dichloromethane



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Dichloromethane

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

Product name:

dichloromethane; methylene dichloride

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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Recommended use:

Used as a solvent in the resin and plastic industries. Non-flammable low-boiling point solvent; often used to replace flammable petroleum ether, ether, etc., and can be used as refrigerant and fire extinguishing agent.

Restricted use:

Not for use in drug production, or in the food or feed industry.

SECTION 2: Hazards identification

Emergency Overview:

Harmful if swallowed, causes skin irritation, may cause drowsiness or dizziness.

GHS Hazard Category:

Acute Toxicity – Oral, Category 4;

Skin corrosion/irritation, category 2;

Serious eye damage/eye irritation, Category 2A;

Carcinogenicity, Category 2;

Specific Target Organ Toxicity – Single Exposure, Category 1;

Specific target organ toxicity – single exposure, category 3 (narcotic effects);

Specific target organ toxicity – repeated exposure, Category 1;

Hazardous to the Aquatic Environment – Acute Hazard, Category 3.

Label elements:

Pictograms:



Warning word: Danger

Hazard Statements:

Harmful if swallowed, causes skin irritation, causes severe eye irritation, is suspected of causing cancer, causes damage to organs, may cause drowsiness or dizziness, causes damage to organs through prolonged or repeated exposure, and is harmful to aquatic life.

Precautionary Statements:

• Precaution

— Avoid contact with eyes, skin or clothing. Wash body contact areas thoroughly after handling. Contaminated work clothes should also be washed thoroughly.

— No smoking, eating or drinking in the workplace.

— Wear protective gloves, protective clothing, protective glasses, and protective face shields.

— Avoid breathing vapor and mist.

— Operate after receiving special instructions. Do not operate until all safety precautions have been read and understood.

— Prohibited discharge into the environment.

• Incident response

— Skin Contact: Immediately remove all contaminated clothing, rinse skin with plenty of soap and water, seek medical attention if skin irritation occurs. Contaminated clothing must be washed before reuse.

—Eye contact: Rinse carefully with water for several minutes, if contact lenses are present and easily removed, remove contact lenses and continue rinsing. If eye irritation continues, seek medical attention.

—Ingestion: Rinse mouth, if you feel unwell, seek medical attention immediately.

- Safe storage

—Store in a well-ventilated place. Keep container tightly closed.

—The storage area must be locked.

- Disposal

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

Physical and Chemical Hazards:

Combustible, its vapors can form explosive mixtures when mixed with air.

Health Hazards:

Route of entry: inhalation, ingestion, percutaneous absorption.

This product has anesthetic effect, mainly damages the central nervous system and respiratory system. Acute poisoning: mild cases may have headache, dizziness, vomiting, and irritation of the eyes and upper respiratory tract mucosa. In severe cases, irritability, unsteady gait, ataxia, and lethargy may occur, which can cause chemical bronchitis; in severe cases, coma may have pulmonary edema. May be accompanied by significant liver and kidney damage. Increased carboxyhemoglobin content in blood. Chronic effects: Long-term exposure mainly includes symptoms such as headache, fatigue, dizziness, loss of appetite, sluggishness, and drowsiness. It has a degreasing effect on the skin, causing dryness, scaling and chapped.

Environmental hazards:

Harmful to aquatic life.

SECTION 3: Composition/information on ingredients

Substance: ✓

Mixture: ×

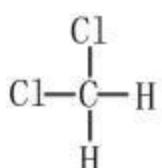
Main ingredient: dichloromethane ($\geq 99\%$)

Molecular weight: 84.93

CAS-No.: 75-09-2

Formula: CH_2Cl_2

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. If breathing or heartbeat stops, perform CPR immediately. Seek medical attention.

Skin Contact:

Immediately remove contaminated clothing and rinse thoroughly with plenty of running water. Seek medical attention.

Eye Contact:

Immediately lift the eyelids and rinse thoroughly with running water or saline. Seek medical attention.

Ingestion:

Rinse mouth, drink water. Seek medical attention.

SECTION 5: Firefighting measures

Fire-fighting precautions and protective measures:

Firefighters must wear air breathing apparatus and full-body fire-proof and gas-proof clothing. Fire the fire upwind. Cool containers with water spray and move containers from fire to an open area if possible. If the container suddenly makes an abnormal noise or has abnormal phenomena, it should be evacuated immediately.

Extinguishing media:

Water mist, foam, carbon dioxide, sand.

Hazardous properties:

Can produce highly toxic phosgene when in contact with open flames or hot objects. In case of humid air, it can be hydrolyzed to generate a small amount of hydrogen chloride, and light can also promote hydrolysis and increase the corrosiveness to metals. Combustion produces harmful carbon monoxide, hydrogen chloride, and phosgene.

SECTION 6: Accidental release measures

Protective measures, protective equipment and emergency procedures for operators:

Delineate a warning area according to the impact area of liquid flow and vapor diffusion, and evacuate unrelated personnel to a safe area from the crosswind and upwind directions. It is recommended that emergency responders wear positive pressure self-contained breathing apparatus,

protective clothing, and chemical-resistant gloves. Cut off sources of leaks as much as possible.

Environmental protection measures:

Prevent leakage from entering restricted spaces such as sewers and flood drains.

Containment and removal of spilled chemicals:

For small spills, absorb with sand or other inert, non-combustible materials. For large spills, build embankments or dig pits for containment, cover with foam to reduce evaporation, and absorb large amounts of liquid with sand, vermiculite or other inert substances. Transfer to a tanker or a special collector with a pump.

Precautions to Prevent Secondary Hazards:

Collected material should be recycled or transported to a waste disposal site for disposal.

SECTION 7: Handling and storage

Handling:

Closed operation, local exhaust. Operators must undergo special training and strictly abide by operating procedures. It is recommended that operators wear direct gas masks (half masks), chemical safety goggles, anti-gas permeable work clothes, 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 vapors from leaking into the workplace air. Avoid contact with alkali metals. When handling, it should be lightly loaded and unloaded to prevent damage to packaging and containers. Equipped with the corresponding variety and quantity of fire fighting equipment and leakage emergency treatment equipment. Empty containers may be harmful residues.

Storage:

Store in a cool, ventilated warehouse. Keep away from fire and heat sources. The storage temperature does not exceed 32° C, and the relative humidity does not exceed 80%. Keep container tightly closed. It should be stored separately from alkali metals and edible chemicals, and should not be stored together. Equipped with the appropriate variety and quantity of fire equipment. Storage areas should be equipped with emergency release equipment and suitable containment materials.

SECTION 8: Exposure controls/personal protection

Occupational Hygiene Exposure Limits:

China PC-TWA 200 mg/m³ 【G2B】

U. S (ACGIH)

TLV-TWA:50ppm

Biological Exposure Limits:

No standard established.

Monitoring method:

Determination method of toxic substances in air: Direct injection-gas chromatography.

Biomonitoring test methods: No standard established.

Engineering control:

Closed operation, local exhaust. Safety showers and eyewash facilities are provided.

Respiratory protection:

When the concentration in the air exceeds the standard, you should wear a filter gas mask (half mask). Wear air breathing apparatus during emergency rescue or evacuation.

Hand Protection:

Wear chemical protective gloves (eg butyl rubber gloves). It is recommended to choose protective gloves that have been tested to EU EN 374, US F739 or AS/NZS 2161.1 standards.

Eye protection:

Wear protective face screen, chemical goggles (in accordance with EU EN166 or US NIOSH standard).

Skin and body protection:

Wear chemical protective clothing and chemical protective boots.

Others:

Smoking, eating and drinking are prohibited at the workplace. After work, take a shower and change clothes. Store poison-contaminated clothes separately and wash them for later use. Pay attention to personal hygiene.

SECTION 9: Physical and chemical properties

Appearance and properties: colorless transparent liquid

Odor: pungent odor

pH value: No relevant information found

Melting point (°C): -95.1

Boiling point (°C): 40

Flash point (°C): No relevant information found

Upper explosion limit [%(V/V)]: 25

Lower explosion limit [%(V/V)]: 12

Saturated vapor pressure (kPa): 47.4 (20°C)

Relative vapor density (air=1): 2.93

Relative density (water=1): 1.33

Solubility: slightly soluble in water, soluble in ethanol and ether

Octanol/water partition coefficient: 1.25

Auto-ignition temperature (°C): 556

Critical temperature (° C): 237

Critical pressure (MPa): 6.08

Viscosity (mPa s): 0.43 (20°C)

Combustion heat (kJ/mol): -604.9

SECTION 10: Stability and reactivity

Stability:

Stable

Hazardous Reactions:

Decomposition or other chemical reactions may occur in contact with incompatible materials.

CONDITIONS TO AVOID:

Light, moist air

Incompatibilities:

Metals, oxidizing agents and alkalis

Hazardous (decomposition) products:

Hydrogen chloride, phosgene

SECTION 11: Toxicological information

Acute toxicity:

LD50: Rat oral (mg/kg): 1600~2000 LC50: Rat inhalation (mg/m³): 88000mg/m³, 0.5 hours.

Skin irritation or corrosion:

Rabbit percutaneous: 810mg/24h, severe irritation.

Eye irritation or corrosion:

Rabbit via eye: 162mg, moderate irritation.

Respiratory or skin sensitization:

No information available.

Germ cell mutagenicity:

Microbial mutagenicity: *Salmonella typhimurium* 5700ppm. DNA inhibition: human fibroblasts 5000ppm (1h) (continuous). DNA damage: hamster ovary 3000ppm. Sister chromatid exchange: hamster lung 5000ppm (1h) (continuous).

Carcinogenicity:

IARC Carcinogenicity Review: Group 2A, probable human carcinogen.

Reproductive toxicity:

Rat (7 hours, 6–15 days of gestation) inhaled the lowest toxic concentration (TCL0) 1250ppm, causing abnormal musculoskeletal development, malformation and abnormality of urogenital system development.

Specific target organ toxicity ---- single exposure:

No relevant information was found.

Specific target organ system toxicity---- Repeated exposure:

rats inhaled 4.69g/m³, 8 hours a day for 75 days, no pathological changes. With increased exposure time, there was mild liver atrophy, steatosis, and cellular infiltration.

Aspiration Hazard:

No information available.

SECTION 12: Ecological information

Ecotoxicity:

LC50: 193mg/L/(96h) (Silva, dynamic); 310 mg/L (96h) (Silver, static); 200~250mg/L (96h) (Bluegill, static)); 224 mg/L (48h) (Daphnia); 256 mg/L (96h) (sugar shrimp). EC50: 27mg/L/(48h) (Daphnia).

Persistence and degradability:

Biodegradability: readily biodegradable. Abiotic degradability: Photolysis maximum light absorption wavelength range (nm): 220~250; Photooxidation half-life in air-high (h): 458~4584; First-order hydrolysis half-life (h): 704a.

Bioaccumulative potential:

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

Mobility in soil:

This substance may be susceptible to migration, as predicted by the Koc value.

SECTION 13: Disposal considerations

Waste Chemicals:

Dispose of by incineration. After mixing with fuel, it is incinerated. Gases from the incinerator are removed by scrubbers.

Contaminated Packaging:

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

Disposal Precautions:

Empty containers should be returned to the manufacturer or disposed of at the designated unit.

SECTION 14: Transport information

United Nations Dangerous Goods Number (UN Number): 1593

UN shipping name: Dichloromethane

United Nations hazard class: Class 6.1

Packing class: Class III packaging

Packaging logo:



Marine Pollutants: No

Packing method:

small opening steel drum; ordinary wooden box outside ampoules; ordinary wooden box outside screw-top glass bottles, iron-capped glass bottles, plastic bottles or metal barrels (cans); screw-top glass bottles, plastic bottles or tin-plated bottles Sheet steel drums (tanks) with full bottom grate boxes, fiberboard boxes or plywood boxes, tank trucks, shipping.

Transportation precautions:

Before transportation, check whether the packaging container is complete and sealed. During transportation, make sure that the container does not leak, collapse, fall or be damaged. It is strictly forbidden to mix with acids, oxidants, food and food additives. During transportation, the transport vehicle shall be equipped with the corresponding variety and quantity of fire fighting equipment and leakage emergency treatment equipment. During transportation, it should be protected from exposure to sunlight, rain, and high temperature. When transporting by road, it is necessary to drive according to the prescribed route, and do not stop in residential areas and densely populated areas.

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: not listed. GB18218-2018 "Identification of Major Hazardous Sources of Hazardous Chemicals" (Table 1): not listed;

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;

The classification and product name number of dangerous goods (GB6944-2012) classifies this substance as Category 6.1 toxic substances.

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.