

SAFETY DATA SHEET

Chemical name : Methyl chloride

Synonyms : Chloromethane

Product use : Synthetic/Analytical chemistry.

Supplier's details : 100, Shui-Guan Rd., Jen-Wu Dist., Kaohsiung City, Taiwan, R.O.C.

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2. Hazards identification

Classification of the substance or mixture :

FLAMMABLE GASES - Category 1

GASES UNDER PRESSURE - Liquefied gas

ACUTE TOXICITY (inhalation) - Category 4

CARCINOGENICITY - Category 2

SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (central nervous system (CNS)) - Category 2



Hazard pictograms :

GHS Symbol: Flame, Gas cylinder, Health hazard, Exclamation mark

Signal word : Danger

Hazard statements :

Extremely flammable gas.

May form explosive mixtures with air.

Contains gas under pressure; may explode if heated.

May cause frostbite.

May displace oxygen and cause rapid suffocation.

Harmful if inhaled.

Suspected of causing cancer.

May cause damage to organs through prolonged or repeated exposure. (central nervous system (CNS))

Prevention :

Use and store only outdoors or in a well ventilated place.

Keep away from heat, sparks, open flames and hot surfaces. - No smoking.

Do not handle until all safety precautions have been read and understood.

Never Put cylinders into unventilated areas of passenger vehicles. Obtain special instructions before use. Use personal protective equipment as required.

Use only outdoors or in a wellventilated area. Do not breathe gas.

3. Composition/information on ingredients

Chemical name : Methyl chloride

Synonym(s) for Product: Chloromethane

CAS No. : 74-87

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Percent : 95%-100%

4. First aid measures

Inhalation:

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/physician. See Notes to Physician below and Section 11 for more information.

Skin contact:

If frostbite or freezing occur, immediately flush with plenty of lukewarm water (100-105 °F, 38-41 °C). If irritation occurs, contact doctor/physician.

Eye contact:

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

Ingestion:

IF SWALLOWED: Call a POISON CENTER OR LICENSED HEALTH CARE PROVIDER if you feel unwell. Rinse mouth.

5. Fire-fighting measures

Extinguishing Media:

Use dry chemical and carbon dioxide

Fire Hazard:

Severe fire hazard. Vapor/air mixtures are explosive. The vapor is heavier than air. Vapors or gases may ignite at distant sources and flash back. Containers may rupture or explode if exposed to heat. Under fire conditions, may produce irritating and/or toxic gases.

Special protective actions for fire-fighters :

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Contact supplier immediately for specialist advice. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. If involved in fire, shut off flow immediately if it can be done without risk. If this is impossible, withdraw from area and allow fire to burn. Fight fire from protected location or maximum possible distance. Eliminate all ignition sources if safe to do so.

Special protective equipment for fire-fighters :

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. For incidents involving large quantities, thermally insulated undergarments and thick textile or leather gloves should be worn.

6. Accidental release measures

Personal Precautions:

This material is highly flammable, handle with extreme care. Evacuate unnecessary personnel and eliminate all sources of ignition. Do not breathe dust, fume, gas, mist, vapors, or spray. Avoid contact with skin and eyes. May be absorbed through the skin. Contact with liquid may cause frostbite. Wear appropriate personal protective equipment recommended in Section 8 of the SDS. Stay upwind and keep out of low areas. Most vapors are heavier than air and will spread along ground and collect in low or confined areas (drains, basements, tanks). Methyl chloride is difficult to detect in air and odor cannot be relied upon as warning of concentrations that are dangerous to health.

Environmental Precautions:

Keep out of water supplies and sewers. Releases should be reported, if required, to appropriate agencies.

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Methods and Materials for Containment and Cleaning Up:

Take action to protect personnel. Evacuate unnecessary and unprotected personnel. Isolate hazard area and deny entry. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Vapors or gases may ignite at distant ignition sources and flash back. Ventilate closed spaces before entering. Stop leak if possible without personal risk. Shut off ventilation system if needed. Reduce vapors with water spray. Evacuation of surrounding area may be necessary for large spills. Prevent spreading of vapors through sewers, ventilation systems, and confined areas. CAUTION: When in contact with refrigerated/cryogenic liquids, many materials become brittle and are likely to break without warning.

7. Handling and storage

Precautions for Safe Handling:

This material is highly flammable, handle with extreme care. Keep away from heat, sparks, flame and other sources of ignition. Ground any equipment used in handling. Use non-sparking tools and equipment. All energized electrical equipment must be designed in accordance with the electrical classification of the area. Do not breathe gas, vapors, or spray mist. Avoid contact with skin, eyes and clothing. Can be absorbed through skin. Direct contact may cause frostbite to exposed tissue (skin, eyes, etc.). Most vapors are heavier than air and will spread along ground and collect in low or confined areas (drains, basements, tanks). Methyl chloride odors are reported not to be noticeable at potentially dangerous concentrations.

Safe Storage Conditions:

Store and handle in accordance with all current regulations and standards. Keep container tightly closed and properly labeled. Store in a cool, dry area. Store in a well-ventilated area. Do not enter confined spaces without following proper confined space entry procedures. Do not enter confined spaces unless adequately ventilated. Avoid heat, flames, sparks and other sources of ignition. Aluminum, zinc or magnesium equipment should not be used for storage or transfer. Grounding and bonding required. May be subject to storage regulations: U.S. OSHA 29 CFR 1910.106. Keep separated from incompatible substances (see below or Section 10 of the Safety Data Sheet).

8. Exposure controls / personal protection

Engineering controls : Use explosion proof equipment and lighting in classified/controlled areas. Provide local exhaust ventilation where vapor or mist may be generated. Ensure compliance with applicable exposure limits.

NON-REGULATORY EXPOSURE LIMIT(S)			
ACGIH TWA	ACGIH STEL	ACGIH CEILING	BEIs
50 ppm	75 ppm	—	—

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Personal protective equipment:

Eye Protection: Wear safety glasses with side-shields. Wear chemical safety goggles with a face shield to protect against eye and skin contact when appropriate. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

Skin and Body Protection: Wear protective clothing to minimize skin contact. Thoroughly clean and dry contaminated clothing before reuse. An apron, headgear and/or face-shield should be worn where liquid contact is possible.

Hand Protection: Wear chemical resistant, insulated gloves that protect against both chemical exposure and freeze burns. Consult a glove supplier for assistance in selecting an appropriate chemical resistant glove.

Protective Material Types:

Viton®, Saranex™, Tychem®, Teflon®, Protective Gloves: Do not use PVC or polyethylene, Methyl chloride attacks natural rubber, CAUTION: When in contact with refrigerated/cryogenic liquids, many materials become brittle and are likely to leak without warning

9. Physical and chemical properties

Appearance : Compressed Colorless gas	Odor : Sweetish.
Odor Threshold : 10ppm	Melting point : -98°C (-142.6°F)
pH : -	Boiling point : -24.2°C (-10.7°F)
Flammability (solid, gas) : Extremely flammable	Flash point : -49.9 °F (-45.5 °C)
Decomposition temperature : -	Method : Closed Cup
Autoignition temperature : 556°C	Flammability Level (air) : 8.1%~17.4%
Vapor Pressure : 4300 mmHg @ 25 °C	Vapor Density : 1.8 (air=1)
Relative Density : 0.916(water=1)	Water Solubility : 5040 mg/L @ 25 °C
Partition coefficient: noctanol/water : 0.91	

10. Stability and reactivity

Reactivity :

Methyl chloride reacts with aluminum to form trimethyl aluminum, a pyrophoric material. Methyl chloride creates an explosive mixture on contact with magnesium, sodium, and other alkali metals. In contact with sodium-potassium alloys, methyl chloride is impact sensitive and may result in an explosion.

Possibility of hazardous reactions :

Avoid heat, flames, sparks and other sources of ignition. Containers may rupture or explode if exposed to heat. Will attack some forms of plastics, rubber, and coatings. Avoid contact with incompatible substances and conditions due to generation of phosgene and other toxic and irritating substances. May react explosively with aluminum in any form. In the presence of moisture, methyl chloride hydrolyzes to form corrosive hydrochloric acid. Methyl chloride creates an explosive mixture on contact with magnesium, sodium, and other alkali

Conditions to avoid :

Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow gas to accumulate in low or confined areas.

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Materials to Avoid :

Oxidizing Agents (such as Perchlorates, Peroxides, Permanganates, Chlorates, Nitrates, Chlorine, Bromine), Amines, Amides, Magnesium, Sodium, Zinc, Potassium, Aluminum, Alkali metals.

Hazardous Decomposition Products: :

Hydrogen chloride

11. Toxicological information

Acute toxicity:

1. In humans, there are reports of (a) "dizziness, frailty, blurred vision, ataxia, lethargy, insomnia, confusion, paresthesia, neurosis and depressive symptom following inhalation exposure", (b) "nausea, severe headache, drunkenness, confusion, somnolence, ataxia and dysphasia following ingestion" and (c) "abnormal ECG, tachycardia and increased heart rate, decreased blood pressure and increase of relative risk of death by cardiovascular diseases"

2. Six (6)-hour inhalation tests were conducted with mice and rats. Hematuria, degeneration and necrosis of the proximal convoluted tubules and hepatic necrosis was reported for mice at a dose level of 1000 ppm (4-hour equivalence: 1225 ppm) (ACGIH (2001)), and hepatic toxicity and renal toxicity was reported in mice at dose level of 2000 ppm (4-hour equivalence: 2690 ppm) or higher concentrations (CICAD 28 (2000)). Similar findings were also reported in rats at a dose level of 3500 ppm (4-hour equivalence: 4287 ppm) or higher (ACGIH (2001))

Chronic toxicity:

Cerebellar damage and neurofunctional impairment and adverse effects on the kidney have been observed in experimental animals. Changes in liver weights and, in some cases, liver damage, have been observed in experimental animals. Studies in experimental animals have shown adverse effects on the spleen in several species. Effects on the spleen have usually been at neurotoxic levels of exposure; therefore, the relevance to humans is not clear.

12. Ecological information

Ecotoxicity data:

Fish Toxicity:

LC50 Bluegill sunfish: 550 mg/L (96 hour)

LC50 Inland silversides: 270 mg/L (96 hour)

Algae Toxicity:

LC50 Green algae: 1450 mg/L

Biodegradation:

Field and lab results demonstrate slow biodegradation under anaerobic conditions, but not under aerobic conditions.-

Bioconcentration:

An estimated BCF of 3 suggests the potential for bioconcentration in aquatic organisms is low.

Persistence: AIR: Half-life is estimated to be 310 days. SOIL: This material does not tend to adsorb to soil. It may leach into groundwater where it can slowly biodegrade under anaerobic conditions. It can slowly hydrolyze to form hydrochloric acid. WATER: This material will rapidly volatilize from water. Half-lives in a model river and model lake are 46 min and 3 days, respectively.

13. Disposal considerations

Waste from material:

Use or reuse if possible. Dispose in accordance with all applicable regulations. May be subject to disposal regulations.

Container Management:

Dispose of container in accordance with applicable local, regional, national, and/or international regulations.

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Container rinsate must be disposed of in compliance with applicable regulations.

14. Transport information

UN NUMBER:1063

PROPER SHIPPING NAME: Methyl chloride

HAZARD CLASS/ DIVISION: 2.1

15. Regulatory information

Applicable regulations :

- 1.Rules for Occupational safety and health facility
- 2.Rules for hazard chemicals sign and general education
- 3.Rules for organic solvent poisoning prevention
- 4.Standards for labor workspaces allowable exposure
- 5.Rules for traffic safety
- 6.Waste storage and cleaning methods and facility standards
- 7.Regulations for Toxicity chemicals

16. Other information

Reference	1.CHEMINFO database , CCINFO disk , 99-2 2.HAZARDTEXT database , TOMES PLUS disk , Vol.41 , 1999 3.RTECS database , TOMES PLUS disk , Vol.41 , 1999 4.HSDB database , TOMES PLUS disk , Vol.41 , 1999 5.hazard chemicals Chinese database , Environmental Protection Administration	
Watchmaking unit	name : Taiwan plastic industrial company limited-Jen Wu NaOH plant.	
	address/telephone : Water, ren Wu district in Kaohsiung City, 100th 886-73711411#5456/5461	
Lister	Job title:engineer	Name : SHIH AN KUO
List date	2021.06.10	
Remark	The data symbol "-" represents the moment where no relevant data, and the symbols "/" represents this field is not applicable to the substances..	