



Lee & Man Chemical

Safety data sheet for chemical product

Hexafluoropropylene



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Hexafluoropropylene

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

Product name:

Hexafluoropropylene, perfluoropropylene

Company name:

Jiangxi Lee & Man Chemical Company Limited

Address:

Dock Industrial City, Jiujiang City, Jiangxi Province

Post code:

332207

Business phone:

0792-8996998

Enterprise emergency number:

0532-83889090

Fax number:

0792-8996988

Email address:

haifeng_sun@leemanchemical.com

Recommended use:

As a raw material for the preparation of fluorosulfonic acid ion exchange membrane, fluorocarbon oil and perfluoropropylene oxide.

Restricted use:

No relevant information was found.

SECTION 2: Hazards identification

Emergency Overview:

Contains pressurized gas: May explode if heated.

GHS Hazard Category:

Pressurized gas;

Acute toxicity - inhalation, category 4;

Specific Target Organ Toxicity - Single Exposure, Category 1;

Specific Target Organ Toxicity – Repeated Exposure, Category 1.

Label elements:

Pictograms:



Warning word: Danger

Hazard statement:

Contains pressurized gas: May explode when heated, harmful if inhaled, cause damage to organs, and cause damage to organs through prolonged or repeated exposure.

Precautionary Statements:

- Precaution

- Thoroughly wash the body contact area after operation. Contaminated work clothes should also be washed thoroughly.
- Do not eat, drink or smoke in the workplace.
- Avoid breathing gas. Avoid contact with eyes, skin or clothing.
- 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. If you feel unwell, seek medical attention immediately.
- IF exposed: Get medical attention.

- Safe storage

- Sun protection. Store in a well-ventilated place. Keep it locked.

- Disposal

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

Physical and chemical hazards:

Non-flammable, no special explosive properties.

Route of entry:

Inhalation.

Health Hazards:

Mainly damages the respiratory system and kidneys.

Acute poisoning can cause toxic bronchitis, pneumonia, and even pulmonary edema after inhalation. Kidney damage is common, and urinalysis may show proteinuria, hematuria, and casts. Some patients have renal impairment. Skin contact with liquid product can cause frostbite.

Environmental Hazards:

May be harmful to the environment.

SECTION 3: Composition/information on ingredients

Substance: ✓

Mixture: ✕

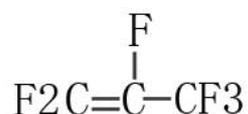
Main ingredient: hexafluoropropylene

Molecular weight: 150.03

CAS-No.: 116-15-4

Formula: C₃ F₆

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:

In case of frostbite, rewarm with warm water (38~42°C), avoid hot water or radiant heat, and do not rub. Seek medical attention.

Eye Contact:

No information found.

Ingestion:

No relevant information found.

SECTION 5: Firefighting measures

Fire-fighting precautions and protective measures:

Firefighters must wear gas masks and full-body fire-fighting suits to put out the fire in the upwind direction. Move the container from the fire area to an open area as much as possible. Keep containers in the fire area cool by spraying water until the fire is over.

Extinguishing agent:

This product is not flammable. Choose the appropriate extinguishing agent according to the cause of the fire.

Hazardous characteristics:

In case of high heat, the internal pressure of the container will increase, and there is a danger of cracking and explosion. Combustion produces harmful carbon monoxide and hydrogen fluoride.

SECTION 6: Accidental release measures**Protective measures, protective equipment and emergency procedures for operators:**

Delineate a warning area according to the impact area of gas 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 and general work clothes. Wear cold clothing when liquefied gas leaks. Cut off sources of leaks as much as possible. Spray water to suppress vapour or redirect vapour cloud flow to avoid water contact with spillage. It is forbidden to directly impact the leakage or leakage source with water.

Environmental protection measures:

Reasonable ventilation to accelerate diffusion. Prevent gas diffusion through restricted spaces such as sewers, ventilation systems, etc. Bleed air is allowed to vent to atmosphere.

Containment and clean-up of spilled chemical:

No information available.

Precautions to prevent secondary hazards:

No information available.

SECTION 7: Handling and storage**Handling precautions:**

Closed operation, comprehensive exhaust. Operators must undergo special training and strictly abide by operating procedures. Self-priming filter respirators (half masks) are recommended for operators. Keep away from flammable and combustible materials. 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 leakage emergency treatment equipment.

Storage Precautions:

Store in a cool, ventilated non-combustible gas warehouse. The storage temperature should not exceed 30°C. Keep away from fire and heat sources. It should be stored separately from flammable or combustible materials and oxidants, and should not be mixed. The storage area should be equipped with leakage emergency treatment equipment.

SECTION 8: Exposure controls/personal protection

Occupational Hygiene Exposure Limits:

China (MAC) 4 mg/m³
U.S (TLV-TWA) ACGIH 0.1ppm

Monitoring methods:

No standard established.

Engineering Control:

Airtight operation, comprehensive exhaust.

Respiratory system protection:

When the concentration in the air is high, the filter type gas mask (half mask) or air respirator should be selected according to the concentration of polluted gas and the lack of oxygen in the working environment.

Hand Protection:

Wear general work protective gloves.

Eye Protection:

Generally, no special protection is required.

Skin and body protection:

Wear general work clothes.

Other protection:

Smoking is strictly prohibited at the work site. Pay attention to personal hygiene.

SECTION 9: Physical and chemical properties

Appearance and Properties: Colorless gas

Odor: Odorless

pH value: meaningless

Melting point (°C): -156.5

Boiling point (° C): -29.6

Flash point (° C): meaningless

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

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

Saturated vapor pressure (kPa): 687.15 (21.1°C)

Relative vapor density (air=1): 5.18

Relative density (water=1): 1.58

Solubility: slightly soluble in ethanol and ether

Octanol/water partition coefficient: 2.12

Ignition temperature (° C): meaningless

Critical temperature (° C): 86

Critical pressure (MPa): 2.75

Decomposition temperature (°C): No information available

SECTION 10: Stability and reactivity

Stability:

Stable

Conditions to Avoid:

Heat

Materials to avoid:

Strong oxidizing agents, flammable or combustible materials

Hazardous (decomposition) products:

No information available

Hazardous reactions:

Contact with incompatible substances such as strong oxidants, there is a danger of container explosion

SECTION 11: Toxicological information

Acute toxicity:

LC50: 11200 mg/m³, 4 hours (rat inhalation); 750ppm (mice inhalation, 4 hours)

Skin irritation or corrosion:

No information available.

Eye irritation or corrosion:

No information available.

Respiratory or skin sensitization:

No information available.

Germ cell mutagenicity:

Not available.

Carcinogenicity:

No information available.

Reproductive toxicity:

No information available.

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:

No relevant information found.

Persistence and degradability:

Biodegradability: No relevant information found. 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 21d (theoretical)

Bioaccumulative potential:

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

Mobility in soil:

According to the prediction of the Koc value, the substance may have some mobility.

SECTION 13: Disposal considerations

Waste chemicals:

Dispose of in accordance with relevant national and local regulations. Or contact the manufacturer or manufacturer to determine disposal methods.

Contaminated Packaging:

Return container to manufacturer or dispose of in accordance with national and local regulations.

Disposal precautions:

Return empty containers to the manufacturer.

SECTION 14: Transport information

United Nations Dangerous Goods Number (UN Number): 1858

UN shipping name: Hexafluoropropene

United Nations hazard class: Class 2.2

Packing class: -

Packaging logo:



Marine Pollutants: No

Packing method:

Steel gas cylinder; ordinary wooden box outside the ampoule.

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. It is strictly forbidden to mix and transport with flammable or combustible materials, oxidants, etc. In summer, it should be transported in the morning and evening to prevent sunlight exposure. It is forbidden to slip away during railway transportation.

SECTION 15: Regulatory information

The following laws, regulations and standards provide corresponding provisions on the safe use, storage, transportation, handling, classification and marking of chemicals:

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: Poisoning of organic fluoropolymer monomers and their thermal lysates;

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

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

Included. 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.

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.