

Material Safety Data Sheet

PART ONE CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

CHINESE NAMES: R290 propane

GENERIC NAME: R290

ENGLISH NAME: propane

COMPANY NAME: XIANGYANG JINLAIER REFRIGERATION CHEMICAL INDUSTRY CO.,LTD

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DATE: JULY 29, 2015.



PART TWO COMPOSITION / INFORMATION OF COMPOSITION

PURE

MIXTURE

GENERIC NAMES: propane

HARMFUL COMPONENTS	* CONTENT	CAS NO.
TETRAFLUOROETHANE	99.05%	74-98-6

PART THREE HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: flammable material.

Invasive ways: inhalation

Health risks: This product has simple asphyxia and anesthetic effects. 1% propane were short-term exposure, does not cause symptoms; 10% propane concentration, only cause mild dizziness; exposure to high concentrations can occur when anesthesia, loss of consciousness; very high concentrations can cause suffocation.

The risk characteristics: In case of high fever, increased pressure containers, and the crack explosion.

Combustion (decomposition) products: carbon monoxide, carbon dioxide, hydrogen fluoride.

Blasting danger: flammable gas

PART FOUR FIRST AID MEASURES

SKIN: Promptly flush skin with water until all chemical is removed. If there is evidence of frostbite, bathe (do not rub) with lukewarm (not hot) water.

EYES: Immediately flush eyes with large amounts of water for at least 15 minutes (in case of frostbite water should be lukewarm, not hot) lifting eyelids occasionally to facilitate irrigation. Get medical attention if symptoms persist.

INHALATION: Immediately remove to fresh air. If breathing has stopped, give artificial respiration. Get medical attention.

INGESTION: Ingestion is unlikely .

PART FIVE FIRE FIGHTING MEASURES

The risk characteristics: flammable gas. Mixed with air to form an explosive mixture, the case source and open flame burning there is a risk of explosion. Oxidant contact with the violent reaction. Its vapor is heavier than air, can spread to lower very far, the event will be the source of the fire burning back on fire.

Hazardous combustion products: carbon monoxide, carbon dioxide.

Fire fighting and fire-fighting agent: to cut off the gas source. If it can not be cut off gas source, not allowed to put out the flames leaked Department. Cooling water containers, if possible, will be moved to the empty containers from the scene of the fire Department. Fire extinguishing agent: water mist, foam, carbon dioxide, dry powder.

PART SIX ACCIDENTAL RELEASE MEASURES

IN CASE OF SPILL OR OTHER RELEASE:

(Always wear recommended personal protective equipment.)

Evacuate unprotected personnel. Protected personnel should remove ignition sources and shut off leak, if without risk, and provide ventilation. Unprotected personnel should not return until air has been tested and determined safe, including low-lying areas.

PART SEVEN HANDLING AND STORAGE

NORMAL HANDLING:

(Always wear recommended personal protective equipment.)

Avoid breathing vapors and liquid contact with eyes, skin or clothing. Do not puncture or drop cylinders, expose them to open flame or excessive heat. Use authorized cylinders only.

STORAGE RECOMMENDATIONS:

Store in a cool, well-ventilated area of low fire risk and out of direct sunlight. Protect cylinder and its fittings from physical damage. Storage in subsurface locations should be avoided. Close valve tightly after use and when empty.

PART EIGHT EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE GUIDELINES

ACGIH TLV : None

ENGINEERING CONTROLS:

Provide local ventilation at filling zones and areas where leakage is probable.

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Mechanical (general) ventilation may be adequate for other operating and storage areas.

PERSONAL PROTECTIVE EQUIPMENT

SKIN PROTECTION:

Skin contact with refrigerant may cause frostbite. General work clothing and gloves (leather) should provide adequate protection. If prolonged contact with the liquid or gas is anticipated, insulated gloves constructed of PVA, neoprene or butyl rubber should be used. Any contaminated clothing should be promptly removed and washed before reuse.

EYE PROTECTION:

For normal conditions, wear safety glasses. Where there is reasonable probability of liquid contact, wear chemical safety goggles.

RESPIRATORY PROTECTION:

None generally required for adequately ventilated work situations. For accidental release or non-ventilated situations, or release into confined space, where the concentration may be above the PEL of 1,000 ppm, use a self-contained, NIOSH - approved breathing apparatus or supplied air respirator.

ADDITIONAL RECOMMENDATIONS:

Provide eyewash stations and quick-drench shower facilities at convenient locations.

PART NINE PHYSICAL AND CHEMICAL PROPERTIES

The main ingredients: pure

And the appearance of the characters: colorless, a slight odor of gas.

Melting Point (°C): -187.6

Boiling Point (°C): -42.1

The relative density (water = 1): 0.58(-44.5 °C)

The relative density of steam (air = 1): 1.56

Saturation vapor pressure (kPa): 53.32 (-55.6 °C)

Heat of combustion (kJ/mol): 2217.8

Critical temperature (°C): 96.8

Critical pressure (MPa): 4.25

Flash point (°C): -104

Ignition temperature (°C): 450

Explosion limit% (V/V): 9.5

Lower explosion limit% (V/V): 2.1

Solubility: micro-soluble in water, soluble in ether.

The main purpose: to dye, the refrigerant chemical synthesis, synthetic rubber, aviation gasoline and lighting.

PART TEN STABILITY AND REACTIVITY

STABILITY: AVOID CONTACT WITH THE HEAT AND FLAME.

BAN-ALLOCATION: STRONG OXIDANT.

AVOID CONTACT: OPEN FLAME, HEAT.

POLYMERIZATION HAZARD: NO.

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DECOMPOSITION PRODUCTS: CARBON MONOXIDE, CARBON DIOXIDE.

PART ELEVEN TOXICOLOGICAL INFORMATION

Acute toxicity: LC₅₀ 220,000 ppm/4h (rats inhaled).

Sub-acute and chronic toxicity: Rabbits, rats, mice inhaled 0.2% concentration, 6 hours / day, a total of 10 months, no toxicity; 1.4% concentration, weight loss, lower serum albumin, globulin increased. See autopsy lung alveolar interstitial thickening, pulmonary edema, heart, kidney and nervous system degeneration.

Mutagenicity: microbial mutagenicity: Salmonella typhimurium 33pph (24 hours), in a row. Microsomal mutation: Salmonella typhimurium 33pph (24 hours) (consecutive).

Reproductive toxicity: poisoning rats inhaled the lowest concentration (TCL0): 50000ppm (5 hours, male 56 days), prostate, seminal vesicle, Cowper's gland, the gland subsidiary, have an impact on the urethra.

Irritation: irritant

PART TWELVE ECOLOGICAL INFORMATION

Eco-toxicity: EC₅₀ 433 mg/L/48h(Daphnia magna)

PART THIRTEEN DISPOSAL CONSIDERATIONS

Nature of the waste: Hazardous Wastes industrial solid waste

Waste disposal: waste cylinder to the recovery of the professional manufacturers

PART FOURTEEN TRANSPORT INFORMATION

UN Number: 1978

Packaging signs: flammable gas

Cargo of dangerous goods code: 21011

Packaging: cylinders, ISO-mounted cabinets or transport tank

Transport Notes: just a bottle of transport must be good to wear helmets on the cylinder. General cylinder instead of horizontal ones, and the bottle should be in the same direction, can not cross; height of the fence board the vehicle, and triangular wooden jail card pad to prevent rolling. Transport transportation vehicles should be equipped with the corresponding variety and quantity of fire equipment. The shipment of goods vehicles must be equipped with exhaust pipe Fire device, easy to produce sparks ban on the use of mechanical handling equipment and tools. Is strictly prohibited and mixed-oxidants such as transportation mix. Summer should be sooner or later, transport, to prevent sunlight exposure. Stopovers to be away from fire and heat. When road transport routes in accordance with the provisions, not in residential areas and densely populated areas remain. When the ban on rail transport to take away

PART FIFTEEN Other Regulatory Information

Laws and regulations: Chemical Safety Management of Dangerous Goods Ordinance (February 17, 1987 issued by the State Council), the chemical safety management of

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dangerous goods regulations to implement the details (of workers made [1992] No. 677), the use of chemicals in the workplace safety requirements ([1996] Department of Labor, made 423) and other laws and regulations for hazardous chemicals on the safe use, production, storage, transportation, handling and so made the corresponding provisions; common classification of dangerous chemicals and signs (GB 13690-92) to draw material 2.1 for the first class of flammable gas.

PART SIXTEEN Other Information

References: 1. "Risk of chemical safety regulations Selected standards", Hubei Province, production safety education and training materials group 2002,12.

Time to fill in a form: JULY 29, 2015.

To fill in a form: Technology

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