

SAFETY DATA SHEET



FROSTBERG®

R-290

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

Product Name : Liquefied Petroleum Refrigerant Gas

MSDS Number : 0000201290

Chemical Family : PROPANE

Product Use Description : Refrigerant Gas

Company : FROSTBERG INTERNATIONAL LLC
16192 Coastal Highway Lewes, Delaware 19958, USA

For More Information : www.frostbergint.com

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Nature : Mixture

CHEMICAL NAME	CAS – NO	CONCENTRATION
Propane	74-98-6	100 %

SECTION 3: HAZARD IDENTIFICATION

Emergency Overview

Form : GAS (Liquefied)

Color : Colorless

Classification of the substance or mixture

Flammable Gas, Gas under pressure, Compressed Gas

GHS Label elements, including precautionary statements

ISSUE DATE: 8-JAN-2024

SAFETY DATA SHEET

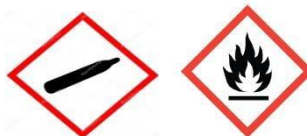


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R-290

Symbol(s)

:



Signal Word

: DANGER

Hazard statement

: Extremely flammable gas, Contains gas under pressure, may explode if heated.

Precautionary statements

: **Prevention:** Keep away from heat, sparks, open flame, and hot surfaces.

Response: Leaking gas fire: Do not extinguish unless leak can be stopped immediately. Eliminate all ignition sources if safe to do so.

Storage: Protect from sunlight, store in a well-ventilated place.

SECTION 4: FIRST AID MEASURES

General advice

: First aider needs to protect himself. Move out of dangerous area. Take off all contaminated clothing immediately.

Inhalation

: Immediately remove to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, qualified personnel may give oxygen. Get medical attention immediately.

Skin contact

: In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

Eye contact

: Immediately flush eyes with plenty of warm water for at least 15 minutes. Get medical attention

Ingestion

: Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention if symptoms appear.

SAFETY DATA SHEET



FROSTBERG®

R-290

Notes to Physician

Treatment : No specific treatment. Contact poison treatment specialist immediately if large amounts have been inhaled or ingested

SECTION 5: FIREFIGHTING MEASURES

FLASH POINT:

AUTO IGNITION TEMPERATURE : 468 C (874 F)

UPPER EXLOSIVE LIMIT : 9.5%

(Volume % in air).

LOWER EXPLOSIVE LIMIT : 2.2%

(Volume % in air).

FIRE FIGHTING INSTRUCTIONS: CO2, dry chemicals, water spray, or fog. If involved in fire, shut off flow immediately if it can be done without risk. Apply water from a safe distance to cool container and protect surrounding area. Extremely flammable. Gas may accumulate in confined areas, travel considerable distance to source of ignition and flash back causing fire or explosion. Fire fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face piece operated in positive pressure mode.

SECTION 6: ACCIDENTAL RELEASE MEASURES

SPILL AND LEAK PPROCEDURES: Immediately contact emergency personnel. Keep unnecessary personnel away. Use suitable protective equipment (Section 8). Shut off gas supply if this can be done safely. Isolate area until gas has dispersed. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

SAFETY DATA SHEET



FROSTBERG®

R-290

SECTION 7: HANDLING AND STORAGE HANDLING

NORMAL HANDLING

: Keep container closed. Use only with adequate ventilation. Keep away from heat, sparks and flame. To avoid fire, minimize ignition sources. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Do not puncture or incinerate container. High pressure gas. Use equipment rated for cylinder pressure. Close valve after each use and when empty. Protect cylinders from physical damage; do not drag, roll, slide, or drop. Use a suitable hand truck for cylinder movement.

STORAGE RECOMMENDATIONS

: Keep container tightly closed. Keep container in a cool, well-ventilated area. Cylinders should be stored upright, with valve protection cap in place, and firmly secured to prevent falling or being knocked over. Cylinder temperatures should not exceed 52°C (125°F).

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS

: Use only with adequate ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. The engineering controls also need to keep gas, vapor or dust concentrations below any explosive limits. Use explosion-proof ventilation equipment

PERSONAL PROTECTION:

SKIN PROTECTION

: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

EYE PROTECTION

: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.

RESPIRATORY PROTECTION

: Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

SAFETY DATA SHEET



FROSTBERG®

R-290

EXPOSURE GUIDELINES

INGREDIENT NAME	ACGIH TLV	OSHA PEL	OTHER LIMIT
Propane	1000 ppm	1000 ppm	

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE	: Colorless, liquefied compressed gas
PHYSICAL STATE	: Gas at ambient temperature
ODOR	: Odorless
SOLUBILITY IN WATER	: 0.0244 g/liter
BOILING POINT	: -43.2°F (-41.79°C)
VAPOR PRESSURE	: 109 psig
FLASHPOINT	: -104°C (-155°F)
EVAPORATION RATE	: Not available
FLAMMABILITY	: Extremely flammable in the presence of ignition sources or oxidizing materials
LEL/UEL	: 2.2% / 9.5%
PARTITION COEFFICIENT	: Log Pow: 1.09
N-OCTANOL/WATER	
AUTO IGNITION TEMPERATURE	: 468 C (874 F)
DECOMPOSITION TEMPERATURE	: Data not available
VISCOSITY	: Not applicable
VAPOR DENSITY	: 1.6 (Air=1) %
VOLATILES BY VOLUME	: 100%
DENSITY	: 0.116 lb / cu ft

ISSUE DATE: 8-JAN- 2024

SAFETY DATA SHEET



FROSTBERG®

R-290

Ph	: Not applicable
MELTING/FREEZING POINT	: -302.6°F (-185.89°C)
SPECIFIC VOLUME (ft3/lb)	: 8.62069
MOLECULAR FORMULA	: C3H8
MOLECULAR WEIGHT	: 44.11 g/mole
BOILING/CONDENSATION POINT	: -161°C / 259°F

Section 10: STABILITY AND REACTIVITY

CHEMICAL STABILITY	: The product is stable.
REACTIVITY	: Not reactive under normal storage conditions.
INCOMPATIBILITY WITH	: Extremely reactive or incompatible with oxidizing agents.
OTHER MATERIALS.	
CONDITONS TO AVOID	: Avoid all possible sources of ignition (spark or flame). Do not cut, weld, braze, solder, drill, or grind container

SECTION 11: TOXICOLOGICAL INFORMATION

TOXICITY DATA:

IDLH	: 2100 ppm
Chronic effects on humans	: Causes damage to the following organs: the nervous system.
Acute toxic effects on humans	: No specific information is available in our database regarding the other toxic effects of this material for humans.

SPECIFIC EFFECTS:

Carcinogenic effects	: No known significant effects or critical hazards.
Mutagenic effects	: No known significant effects or critical hazards.
Reproductive toxicity	: No known significant effects or critical hazards.

ISSUE DATE: 8-JAN- 2024

SAFETY DATA SHEET



FROSTBERG®

R-290

SECTION 12: ECOLOGICAL INFORMATION

DEGRADABILITY (BOD):

Products of degradation : These products are carbon oxides (CO, CO₂) and water.

Toxicity of the products : The product itself and its products of degradation are not toxic.

Of biodegradation.

Environmental fate : Not available

Environmental hazards : No known significant effects or critical hazards.

Toxicity to the environment : Not available.

SECTION 13: DISPOSAL CONSIDERATIONS

DISPOSAL METHOD : Product removed from the cylinder must be disposed of in accordance with appropriate Federal, State, and local regulations.

SECTION 14: TRANSPORT INFORMATION

US DOT ID NUMBER : UN 1978

US DOT SHIPPING NAME : PROPANE

US DOT HAZARD CLASS : 2.1

US DOT PACKING GROUP : NA

ISSUE DATE: 8-JAN- 2024

SAFETY DATA SHEET



FROSTBERG®

R-290

SECTION 15: REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS:

TSCA 8(b) inventory : Propane

SARA 302/304/311/312 : No products were found.
Extremely hazardous substances

SARA 302/304 emergency : No products were found.
Planning and notification : No products were found.

SARA 302/304/311/312 : Propane
Hazardous chemicals

SARA 311/312 MSDS distribution – chemical inventory – hazard identification: Propane: Fire hazard, Sudden Release of Pressure

Clean Water Act (CWA) 307: No products were found.

Clean Water Act (CWA) 311: No products were found.

Clean Air Act (CAA) 112 accidental release prevention: Propane

Clean Air Act (CAA) 112 regulated flammable substances: Propane

Clean Air Act (CAA) 112 regulated toxic substances: No products were found.

STATE REGULATIONS:

Pennsylvania RTK: Propane: (generic environmental hazard)

Massachusetts RTK: Propane

New Jersey: Propane

CANADA

WHMIS (Canada) : Class A: Compressed gas
: Class B-1: Flammable gas
: CEPA DSL: Propane

ISSUE DATE: 8-JAN- 2024

SAFETY DATA SHEET



FROSTBERG®

R-290

SECTION 16: OTHER INFORMATION

HMIS RATING		NFPA RATING
Health hazard	1	1
Flammability	4	4
Physical Hazard	0	0
Special	None	Personal protection: C

Further information

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. Final determination of suitability of any material is the sole responsibility of the user. This information should not constitute a guarantee for any specific product properties.

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