

# SAFETY DATA SHEET

Propane

**Airgas**  
an Air Liquide company

## Section 1. Identification

<b>GHS product identifier</b>	: Propane
<b>Chemical name</b>	: propane
<b>Other means of identification</b>	: Propyl hydride; n-Propane; Dimethyl methane; Bottled gas; propane in gaseous state; propane liquefied; chlorodifluoromethane—1,1-difluoroethane—propane; 1,1,1,2-tetrafluoroethane—1,1-difluoroethane—propane; 1,1-difluoroethane—propane; E 944; HC-290; R290; E 944
<b>Product type</b>	: Liquefied gas.
<b>Product use</b>	: Synthetic/Analytical chemistry.
<b>Synonym</b>	: Propyl hydride; n-Propane; Dimethyl methane; Bottled gas; propane in gaseous state; propane liquefied; chlorodifluoromethane—1,1-difluoroethane—propane; 1,1,1,2-tetrafluoroethane—1,1-difluoroethane—propane; 1,1-difluoroethane—propane; E 944; HC-290; R290; E 944
<b>SDS #</b>	: 001045
<b>Supplier's details</b>	: Airgas USA, LLC and its affiliates 259 North Radnor-Chester Road Suite 100 Radnor, PA 19087-5283 1-610-687-5253 Inside the US: 1-800-424-9300 (Chemtrec, 24 hours) Outside the US: 1-703-527-3887 (Chemtrec, 24 hours)
<b>24-hour telephone</b>	: Airgas Emergency Response Center 1-866-734-3438

## Section 2. Hazards identification

<b>OSHA/HCS status</b>	: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
<b>Classification of the substance or mixture</b>	: FLAMMABLE GASES - Category 1 GASES UNDER PRESSURE - Liquefied gas

### GHS label elements

#### **Hazard pictograms**



**Signal word** : Danger

**Hazard statements** : H220 - Extremely flammable gas.  
H280 - Contains gas under pressure; may explode if heated.  
May cause frostbite.  
May displace oxygen and cause rapid suffocation.  
May form explosive mixtures with air.

### Precautionary statements

#### **General**

: Read and follow all Safety Data Sheets (SDS'S) before use. Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand. Close valve after each use and when empty. Use equipment rated for cylinder pressure. Do not open valve until connected to equipment prepared for use. Use a back flow preventative device in the piping. Use only equipment of compatible materials of construction. Always keep container in upright position. Approach suspected leak area with caution.

#### **Prevention**

: P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

#### **Response**

: P377 - Leaking gas fire: Do not extinguish, unless leak can be stopped safely.  
P381 - In case of leakage, eliminate all ignition sources.

#### **Storage**

: P410 + P403 - Protect from sunlight. Store in a well-ventilated place.

## Section 2. Hazards identification

- Disposal** : Not applicable.
- Hazards not otherwise classified** : Liquid can cause burns similar to frostbite.

## Section 3. Composition/information on ingredients

- Substance/mixture** : Substance
- Chemical name** : propane
- Other means of identification** : Propyl hydride; n-Propane; Dimethyl methane; Bottled gas; propane in gaseous state; propane liquefied; chlorodifluoromethane—1,1-difluoroethane—propane; 1,1,1,2-tetrafluoroethane—1,1-difluoroethane—propane; 1,1-difluoroethane—propane; E 944; HC-290; R290; E 944
- Product code** : 001045

Ingredient name	%	CAS number
Propane	100	74-98-6

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

## Section 4. First aid measures

### Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- Skin contact** : Wash contaminated skin with soap and water. Remove contaminated clothing and shoes. To avoid the risk of static discharges and gas ignition, soak contaminated clothing thoroughly with water before removing it. Get medical attention if symptoms occur. In case of contact with liquid, warm frozen tissues slowly with lukewarm water and get medical attention. Do not rub affected area.
- Ingestion** : Ingestion of liquid can cause burns similar to frostbite. If frostbite occurs, get medical attention. As this product rapidly becomes a gas when released, refer to the inhalation section.

### Most important symptoms/effects, acute and delayed

#### Potential acute health effects

- Eye contact** : Liquid can cause burns similar to frostbite.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : Dermal contact with rapidly evaporating liquid could result in freezing of the tissues or frostbite.
- Frostbite** : Try to warm up the frozen tissues and seek medical attention.
- Ingestion** : Ingestion of liquid can cause burns similar to frostbite.

#### Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:  
frostbite
- Inhalation** : No specific data.
- Skin contact** : Adverse symptoms may include the following:  
frostbite
- Ingestion** : Adverse symptoms may include the following:  
frostbite

## Section 4. First aid measures

### Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

## Section 5. Fire-fighting measures

### Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : None known.

- Specific hazards arising from the chemical** : Contains gas under pressure. Extremely flammable gas. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapor/gas is heavier than air and will spread along the ground. Gas may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back, causing fire or explosion.

- Hazardous thermal decomposition products** : Decomposition products may include the following materials:  
carbon dioxide  
carbon monoxide

- 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.

## Section 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : Accidental releases pose a serious fire or explosion hazard. No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Put on appropriate personal protective equipment.
- For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

- Environmental precautions** : Ensure emergency procedures to deal with accidental gas releases are in place to avoid contamination of the environment. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

### Methods and materials for containment and cleaning up

- Small spill** : Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment.

## Section 6. Accidental release measures

- Large spill** : Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment.

## Section 7. Handling and storage

### Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Contains gas under pressure. Do not get in eyes or on skin or clothing. Avoid breathing gas. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Do not puncture or incinerate container. 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.  
Use only non-sparking tools. Empty containers retain product residue and can be hazardous. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment.

- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in a segregated and approved area. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Eliminate all ignition sources. Keep container tightly closed and sealed until ready for use. See Section 10 for incompatible materials before handling or use. 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

### Control parameters

#### Occupational exposure limits

Ingredient name	Exposure limits
Propane	<b>NIOSH REL (United States, 10/2020)</b> TWA 10 hours: 1000 ppm. TWA 10 hours: 1800 mg/m <sup>3</sup> . <b>CAL OSHA PEL (United States, 5/2018)</b> TWA 8 hours: 1800 mg/m <sup>3</sup> . TWA 8 hours: 1000 ppm. <b>OSHA PEL (United States, 5/2018)</b> TWA 8 hours: 1000 ppm. TWA 8 hours: 1800 mg/m <sup>3</sup> . <b>OSHA PEL 1989 (United States, 3/1989)</b> TWA 8 hours: 1000 ppm. TWA 8 hours: 1800 mg/m <sup>3</sup> . <b>ACGIH TLV (United States, 1/2024)</b> Oxygen depletion [asphyxiant] , Explosive potential.

#### Biological exposure indices

No exposure indices known.

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

## Section 8. Exposure controls/personal protection

**Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

### Individual protection measures

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face 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, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.
- Skin protection**
- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. If contact with the liquid is possible, insulated gloves suitable for low temperatures should be worn. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
- Body 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. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.
- Thermal hazards** : If there is a risk of contact with the liquid, all protective equipment worn should be suitable for use with extremely low temperature materials.

## Section 9. Physical and chemical properties

### Appearance

- Physical state** : Gas. [Compressed gas.]
- Color** : Colorless.
- Odor** : Odorless.
- Odor threshold** : Not available.
- pH** : Not applicable.
- Melting point/freezing point** : -187.6°C (-305.7°F)
- Boiling point or initial boiling point and boiling range** : -161.48°C (-258.7°F)
- Flash point** : Closed cup: -104°C (-155.2°F)  
Open cup: -104°C (-155.2°F)
- Evaporation rate** : Not available.
- Flammability (solid, gas)** : Extremely flammable in the presence of the following materials or conditions: open flames, sparks and static discharge and oxidizing materials.

## Section 9. Physical and chemical properties

<b>Lower and upper explosive (flammable) limits</b>	: Lower: 1.8% Upper: 8.4%
<b>Vapor pressure</b>	: 109 (psig)
<b>Relative vapor density</b>	: 1.6 [Air = 1]
<b>Specific Volume (ft<sup>3</sup>/lb)</b>	: 2.3641
<b>Gas Density (lb/ft<sup>3</sup>)</b>	: 0.423 (25°C / 77 to °F)
<b>Relative density</b>	: Not applicable.
<b>Solubility in water</b>	: 0.0244 g/l
<b>Partition coefficient: n-octanol/water</b>	: 1.09
<b>Auto-ignition temperature</b>	: 287°C (548.6°F)
<b>Decomposition temperature</b>	: Not available.
<b>Flow time (ISO 2431)</b>	: Not available.
<b>Molecular weight</b>	: 44.11 g/mole

### Aerosol product

<b>Heat of combustion</b>	: -46012932 J/kg
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## Section 10. Stability and reactivity

<b>Reactivity</b>	: No specific test data related to reactivity available for this product or its ingredients.
<b>Chemical stability</b>	: The product is stable.
<b>Possibility of hazardous reactions</b>	: Under normal conditions of storage and use, hazardous reactions will not occur.
<b>Conditions to avoid</b>	: 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.
<b>Incompatible materials</b>	: Oxidizers
<b>Hazardous decomposition products</b>	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.
<b>Hazardous polymerization</b>	: Under normal conditions of storage and use, hazardous polymerization will not occur.

## Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

Not available.

**Conclusion/Summary [Product]** : Not available.

#### Skin corrosion/irritation

Not available.

**Conclusion/Summary [Product]** : Not available.

#### Serious eye damage/eye irritation

## Section 11. Toxicological information

Not available.

**Conclusion/Summary [Product]** : Not available.

### Respiratory corrosion/irritation

Not available.

**Conclusion/Summary [Product]** : Not available.

### Respiratory or skin sensitization

Not available.

### **Skin**

**Conclusion/Summary [Product]** : Not available.

### **Respiratory**

**Conclusion/Summary [Product]** : Not available.

### Germ cell mutagenicity

Not available.

**Conclusion/Summary [Product]** : Not available.

### Carcinogenicity

Not available.

**Conclusion/Summary [Product]** : Not available.

### Reproductive toxicity

Not available.

**Conclusion/Summary [Product]** : Not available.

### Specific target organ toxicity (single exposure)

Not available.

### Specific target organ toxicity (repeated exposure)

Not available.

### Aspiration hazard

Not available.

### Information on the likely routes of exposure

Not available.

### Potential acute health effects

**Eye contact** : Liquid can cause burns similar to frostbite.

**Inhalation** : No known significant effects or critical hazards.



## Section 11. Toxicological information

- Skin contact** : Dermal contact with rapidly evaporating liquid could result in freezing of the tissues or frostbite.
- Ingestion** : Ingestion of liquid can cause burns similar to frostbite.

### Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : Adverse symptoms may include the following:  
frostbite
- Inhalation** : No specific data.
- Skin contact** : Adverse symptoms may include the following:  
frostbite
- Ingestion** : Adverse symptoms may include the following:  
frostbite

### Delayed and immediate effects and also chronic effects from short and long term exposure

#### Short term exposure

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

#### Long term exposure

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

### Potential chronic health effects

Not available.

- Conclusion/Summary [Product]** : Not available.

- General** : No known significant effects or critical hazards.
- Carcinogenicity** : No known significant effects or critical hazards.
- Mutagenicity** : No known significant effects or critical hazards.
- Reproductive toxicity** : No known significant effects or critical hazards.

### Numerical measures of toxicity

#### Acute toxicity estimates

N/A

## Section 12. Ecological information

### Toxicity

Not available.

- Conclusion/Summary [Product]** : Not available.

### Persistence and degradability

Not available.

- Conclusion/Summary [Product]** : Not available.

### Bioaccumulative potential



## Section 12. Ecological information

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
Propane	1.09	-	Low

### Mobility in soil

Soil/Water partition coefficient : 8.6207 Koc






### Other adverse effects

No known significant effects or critical hazards.

## Section 13. Disposal considerations

**Disposal methods** : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Empty pressure vessels should be returned to the supplier. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Do not puncture or incinerate container.

## Section 14. Transport information

	DOT	TDG	Mexico	IMDG	IATA
UN number	UN1978	UN1978	UN1978	UN1978	UN1978
UN proper shipping name	Propane	PROPANE	PROPANO	PROPANE	Propane
Transport hazard class(es)	2.1 	2.1 	2.1 	2.1 	2.1 
Packing group	-	-	-	-	-
Environmental hazards	No.	No.	No.	No.	No.

“Refer to CFR 49 (or authority having jurisdiction) to determine the information required for shipment of the product.”

### Additional information

#### DOT Classification

: **Limited quantity** Yes.  
**Packaging instruction** Exceptions: 306. Non-bulk: 304. Bulk: 314, 315.  
**Quantity limitation** Passenger aircraft/rail: Forbidden. Cargo aircraft: 150 kg.  
**Special provisions** 19, T50, N95

#### TDG Classification

: Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.13-2.17 (Class 2).  
**Explosive Limit and Limited Quantity Index** 0.125  
**ERAP Index** 3000  
**Passenger Carrying Vessel Index** 110  
**Passenger Carrying Road or Rail Index** Forbidden  
**Special provisions** 88

## Section 14. Transport information

- IMDG** : **Emergency schedules** F-D, S-U  
**Special provisions** 392
- IATA** : **Quantity limitation** Passenger and Cargo Aircraft: Forbidden. Packaging instructions: Forbidden. Cargo Aircraft Only: 150 kg. Packaging instructions: 200. Limited Quantities - Passenger Aircraft: Forbidden. Packaging instructions: Forbidden.  
**Special provisions** A1

**Special precautions for user** : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

**Transport in bulk according to IMO instruments** : Not available.

## Section 15. Regulatory information

- U.S. Federal regulations** :
- TSCA 8(a) CDR Exempt/Partial exemption:** Not determined  
**Clean Air Act (CAA) 112 regulated flammable substances:** propane

### TSCA 12(b) - Chemical export notification

Not applicable.

**Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs)** : Not listed

**Clean Air Act Section 602 Class I Substances** : Not listed

**Clean Air Act Section 602 Class II Substances** : Not listed

**DEA List I Chemicals (Precursor Chemicals)** : Not listed

**DEA List II Chemicals (Essential Chemicals)** : Not listed

### SARA 302/304

#### Composition/information on ingredients

No products were found.

**SARA 304 RQ** : Not applicable.

### SARA 311/312

**Classification** : Refer to Section 2: Hazards Identification of this SDS for classification of substance.

### State regulations

**Massachusetts** : This material is listed.

**New York** : This material is not listed.

**New Jersey** : This material is listed.

**Pennsylvania** : This material is listed.

### California Prop. 65

This product does not require a Safe Harbor warning under California Prop. 65.

### International regulations

#### Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

#### Montreal Protocol

Not listed.

## Section 15. Regulatory information

### [Stockholm Convention on Persistent Organic Pollutants](#)

Not listed.

### [Rotterdam Convention on Prior Informed Consent \(PIC\)](#)

Not listed.

### [UNECE Aarhus Protocol on POPs and Heavy Metals](#)

Not listed.

### [Inventory list](#)

<b>Australia</b>	: This material is listed or exempted.
<b>Canada</b>	: This material is listed or exempted.
<b>China</b>	: This material is listed or exempted.
<b>Eurasian Economic Union</b>	: <b>Russian Federation inventory</b> : This material is listed or exempted.
<b>Japan</b>	: <b>Japan inventory (CSCL)</b> : This material is listed or exempted. <b>Japan inventory (ISHL)</b> : This material is listed or exempted.
<b>New Zealand</b>	: This material is listed or exempted.
<b>Philippines</b>	: This material is listed or exempted.
<b>Republic of Korea</b>	: This material is listed or exempted.
<b>Taiwan</b>	: This material is listed or exempted.
<b>Thailand</b>	: This material is listed or exempted.
<b>Turkey</b>	: This material is listed or exempted.
<b>United States</b>	: This material is active or exempted.
<b>Viet Nam</b>	: This material is listed or exempted.

## Section 16. Other information

### [Hazardous Material Information System \(U.S.A.\)](#)

Health	/	2
Flammability		4
Physical hazards		0

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on SDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

### [National Fire Protection Association \(U.S.A.\)](#)



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## Section 16. Other information

Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

### Procedure used to derive the classification

Classification	Justification
FLAMMABLE GASES - Category 1	Expert judgment
GASES UNDER PRESSURE - Liquefied gas	Expert judgment

### History

**Date of printing** : 6/24/2025

**Date of issue/Date of revision** : 6/24/2025

**Date of previous issue** : 6/18/2025

**Version** : 2.06

### Key to abbreviations

: ATE = Acute Toxicity Estimate  
 BCF = Bioconcentration Factor  
 GHS = Globally Harmonized System of Classification and Labelling of Chemicals  
 IATA = International Air Transport Association  
 IBC = Intermediate Bulk Container  
 IMDG = International Maritime Dangerous Goods  
 LogPow = logarithm of the octanol/water partition coefficient  
 MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)  
 UN = United Nations

### References

: The information below is given to call attention to the issue of "Naturally occurring radioactive materials". Although Radon-222 levels in the product represented by this MSDS do not present any direct Radon exposure hazard, customers should be aware of the potential for Radon daughter build up within their processing systems, whatever the source of their product streams. Radon-222 is a naturally occurring radioactive gas which can be a contaminant in natural gas. During subsequent processing, Radon tends to be concentrated in Liquefied Petroleum Gas streams and in product streams having a similar boiling point range. Industry experience has shown that this product may contain small amounts of Radon-222 and its radioactive decay products, called Radon "daughters". The actual concentration of Radon-222 and radioactive daughters in the delivered product is dependent on the geographical source of the natural gas and storage time prior to delivery. Process equipment (i.e. lines, filters, pumps and reaction units) may accumulate significant levels of radioactive daughters and show a gamma radiation reading during operation. A potential external radiation hazard exists at or near any pipe valve or vessel containing a Radon enriched stream, or containing internal deposits of radioactive material due to the transmission of gamma radiation through its wall. Field studies reported in the literature have not shown any conditions that subject workers to cumulative exposures in excess of general population limits. Equipment emitting gamma radiation should be presumed to be internally contaminated with alpha emitting decay products which may be a hazard if inhaled or ingested. Protective equipment such as coveralls, gloves, and respirator (NIOSH/MHSA approved for high efficiency particulates and radionuclides, or supplied air) should be worn by personnel entering a vessel or working on contaminated process equipment to prevent skin contamination, ingestion, or inhalation of any residues containing alpha radiation. Airborne contamination may be minimized by handling scale and/or contaminated materials in a wet state.

### Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.