

# PROPANE

## Safety Data Sheet



### 1. IDENTIFICATION

**Product identifier**

**Product Name** PROPANE

**Other means of identification**

**Safety data sheet number** LIND-P105

**UN/ID no.** UN1075

**Trade name** Propane Care40 R290

**Other Information** Propane may ship under proper shipping name "Liquefied Petroleum Gases".

**Recommended use of the chemical and restrictions on use**

**Recommended Use** Industrial and professional use. Fuels.

**Uses advised against** Consumer use

**Details of the supplier of the safety data sheet**

Messer North America, Inc. - Messer LLC - Messer Merchant Production LLC  
200 Somerset Corporate Blvd, Suite 7000  
Bridgewater, NJ 08807  
Phone: 908-464-8100  
www.messer-us.com

Messer Gas Puerto Rico, Inc.  
Road 869, Km 1.8  
Barrio Palmas, Catano, PR 00962  
Phone: 787-641-7445

\* May include subsidiaries or affiliate companies/divisions.

For additional product information contact your local customer service.

**Emergency telephone number**

**Company Phone Number** +1 800-232-4726 (Messer National Operations Center, US)

CHEMTREC: 1-800-424-9300 (North America) +1-703-527-3887 (International)

## 2. HAZARDS IDENTIFICATION

### Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

Flammable gases	Category 1
Gases under pressure	Liquefied gas
Simple asphyxiants	Yes

### Label elements



Signal word

Danger

### **Hazard Statements**

Extremely flammable gas  
 Contains gas under pressure; may explode if heated  
 May displace oxygen and cause rapid suffocation  
 May form explosive mixtures with air  
 May cause frostbite

### **Precautionary Statements - Prevention**

Do not handle until all safety precautions have been read and understood  
 Keep away from heat, sparks, open flames, hot surfaces. — No smoking  
 Use and store only outdoors or in a well ventilated place  
 Use a backflow preventive device in piping  
 Do not open valve until connected to equipment prepared for use  
 Close valve after each use and when empty  
 Never put cylinders into unventilated areas of passenger vehicles

### **Precautionary Statements - Response**

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Get medical attention/advice.  
 IF ON SKIN: Thaw frosted parts with lukewarm water. Do not rub affected area. Get immediate medical advice/attention.  
 Leaking gas fire: do not extinguish, unless leak can be stopped safely.  
 Eliminate all ignition sources if safe to do so.

### **Precautionary Statements - Storage**

Protect from sunlight when ambient temperature exceeds 52°C/125°F

### **Hazards not otherwise classified (HNOC)**

Not applicable

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Pure Gas

Chemical Name	CAS No.	Volume %	Chemical Formula
PROPANE	74-98-6	>99	C <sub>3</sub> H <sub>8</sub>

#### 4. FIRST AID MEASURES

##### Description of first aid measures

<b>General advice</b>	Show this safety data sheet to the doctor in attendance.
<b>Inhalation</b>	Remove to fresh air and keep comfortable for breathing. If breathing is difficult, give oxygen. If breathing has stopped, give artificial respiration. Get medical attention immediately.
<b>Skin contact</b>	For dermal contact or suspected frostbite, remove contaminated clothing and flush affected areas with lukewarm water. DO NOT USE HOT WATER. A physician should see the patient promptly if contact with the product has resulted in blistering of the dermal surface or in deep tissue freezing.
<b>Eye contact</b>	If frostbite is suspected, flush eyes with cool water for 15 minutes and obtain immediate medical attention.
<b>Ingestion</b>	Not an expected route of exposure.
<b>Self-protection of the first aider</b>	RESCUE PERSONNEL SHOULD BE EQUIPPED WITH SELF-CONTAINED BREATHING APPARATUS. Remove all sources of ignition.

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

<b>Symptoms</b>	High concentrations may cause asphyxia from lack of oxygen or act as a narcotic causing central nervous system depression. May cause nausea, dizziness, headaches, shortness of breath, lethargy, narcosis, unconsciousness and possibly cardiac arrhythmias. Contact with evaporating liquid may cause cold burns/frostbite.
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##### Indication of any immediate medical attention and special treatment needed

<b>Note to physicians</b>	A patient adversely affected by exposure to this product should not be given adrenaline (epinephrine) or similar heart stimulant since these would increase the risk of cardiac arrhythmias.
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## 5. FIRE-FIGHTING MEASURES

### Suitable extinguishing media

Dry chemical or CO<sub>2</sub>. Water spray (fog). DO NOT EXTINGUISH A LEAKING GAS FIRE UNLESS LEAK CAN BE STOPPED.

Unsuitable extinguishing media Do not use a solid water stream as it may scatter and spread fire.

### Specific extinguishing methods

If possible, stop the flow of gas. Do not extinguish the fire until supply is shut off as otherwise an explosive-ignition may occur. If the fire is extinguished and the flow of gas continues, use increased ventilation to prevent build-up of explosive atmosphere. Ventilation fans must be explosion proof. Use non-sparking tools to close container valves.

Use water spray to cool surrounding containers. Be cautious of a Boiling Liquid Evaporating Vapor Explosion, BLEVE, if flame is impinging on surrounding containers. For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible withdraw from area and let fire burn. Damaged cylinders should be handled only by specialists.

### Specific hazards arising from the chemical

Extremely flammable gas. May form explosive mixtures with air. Will be easily ignited by heat, sparks or flames. Vapors may travel to source of ignition and flash back. Vapors from liquefied gas are initially heavier than air and spread along ground. Vapors may accumulate in confined areas (basement, tanks, hopper/tank cars, etc.). Cylinders may rupture under extreme heat.

### Hazardous combustion products

Carbon monoxide. Carbon dioxide (CO<sub>2</sub>).

### Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, NIOSH (approved or equivalent) and full protective gear. As an immediate precautionary measure, isolate spill or leak area for at least 100 meters (330 feet) in all directions.

## 6. ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

#### **Personal precautions**

ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Evacuate personnel to safe areas. Ensure adequate ventilation, especially in confined areas. Consider the risk of potentially explosive atmospheres. Monitor oxygen level. All equipment used when handling the product must be grounded. Use non-sparking tools and equipment. Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe.

#### **Other Information**

Gas/vapor is heavier than air. Prevent from entering sewers, basements and workpits, or any place where accumulation may be dangerous.

### Environmental precautions

#### **Environmental precautions**

Prevent spreading of vapors through sewers, ventilation systems and confined areas.

### Methods and material for containment and cleaning up

#### **Methods for containment**

Stop the flow of gas or remove cylinder to outdoor location if this can be done without risk. If leak is in container or container valve, contact the appropriate emergency telephone number in Section 1 or call your closest Messer location.

#### **Methods for cleaning up**

Do not direct water at spill or source of leak. Return cylinder to Messer or an authorized distributor.

## 7. HANDLING AND STORAGE

### Precautions for safe handling

#### **Advice on safe handling**

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking Ground and bond all lines and equipment associated with product system. All

equipment should be non-sparking and explosion proof. Separate flammable gas cylinders from oxygen and other oxidizers by a minimum distance of 20 ft. or by a 5 ft. high barrier with a minimum fire resistance rating of a half an hour. "NO SMOKING" signs should be posted in storage and use areas.

Protect cylinders from physical damage; do not drag, roll, slide or drop. When moving cylinders, even for short distance, use a cart designed to transport cylinders. Never attempt to lift a cylinder by its valve protection cap. Never insert an object (e.g. wrench, screwdriver, pry bar, etc.) into valve cap openings. Doing so may damage valve, causing leak to occur. Use an adjustable strap wrench to remove over-tight or rusted caps. Use only with adequate ventilation. Use a backflow preventive device in piping. Use only with equipment rated for cylinder pressure. Close valve after each use and when empty. If user experiences any difficulty operating cylinder valve discontinue use and contact supplier. Ensure the complete gas system has been checked for leaks before use.

Never put cylinders into trunks of cars or unventilated areas of passenger vehicles. Never attempt to refill a compressed gas cylinder without the owner's written consent. Never strike an arc on a compressed gas cylinder or make a cylinder a part of an electrical circuit.

Only experienced and properly instructed persons should handle gases under pressure. Always store and handle compressed gas cylinders in accordance with Compressed Gas Association publication CGA-P1, Safe Handling of Compressed Gases in Containers.

#### **Conditions for safe storage, including any incompatibilities**

##### **Storage Conditions**

Store in cool, dry, well-ventilated area of non-combustible construction away from heavily trafficked areas and emergency exits. Keep at temperatures below 52°C / 125°F. Cylinders should be stored upright with valve protection cap in place and firmly secured to prevent falling. Full and empty cylinders should be segregated. Use a "first in-first out" inventory system to prevent full cylinders from being stored for excessive periods of time. Stored containers should be periodically checked for general condition and leakage. Outside or detached storage is preferred.

##### **Incompatible materials**

Oxidizing agents.

## **8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

#### **Control parameters**

##### **Exposure Guidelines**

<b>Chemical Name</b>	<b>ACGIH TLV</b>	<b>OSHA PEL</b>	<b>NIOSH IDLH</b>
PROPANE 74-98-6	: See Appendix F: Minimal Oxygen Content	TWA: 1000 ppm TWA: 1800 mg/m <sup>3</sup> (vacated) TWA: 1000 ppm (vacated) TWA: 1800 mg/m <sup>3</sup>	IDLH: 2100 ppm TWA: 1000 ppm TWA: 1800 mg/m <sup>3</sup>

ACGIH TLV: American Conference of Governmental Industrial Hygienists - Threshold Limit Value. OSHA PEL: Occupational Safety and Health Administration - Permissible Exposure Limits. NIOSH IDLH: Immediately Dangerous to Life or Health.

##### **Other Information**

Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

#### **Appropriate engineering controls**

##### **Engineering Controls**

Provide general ventilation, local exhaust ventilation, process enclosure or other engineering controls to maintain airborne levels below recommended exposure limits and to maintain oxygen levels above 19.5%. Explosion proof ventilation systems. Oxygen detectors should be used when asphyxiating gases may be released. Consider installation of leak detection systems in areas of use and storage. Systems under pressure should be regularly checked for leakages. Showers. Eyewash stations.

#### **Individual protection measures, such as personal protective equipment**

<b>Eye/face protection</b>	Wear safety glasses with side shields (or goggles). If there is potential for exposure to liquid, wear Goggles face-shield over either safety glasses with side shields or safety goggles.
<b>Skin and body protection</b>	Work gloves and safety shoes are recommended when handling cylinders. Wear loose fitting, cold insulating gloves and suitable clothing to prevent skin contact with liquid, cold gas and cold equipment or piping. Wear fire/flame resistant/retardant clothing. Take precautionary measures against static discharge.
<b>Respiratory protection</b>	If exposure limits are exceeded or irritation is experienced, NIOSH approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.
<b>General Hygiene Considerations</b>	Handle in accordance with good industrial hygiene and safety practice. Do not get in eyes, on skin, or on clothing.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

<b>Physical state</b>	Gas
<b>Appearance</b>	Colorless
<b>Odor</b>	An odorant may be added to the gas to aid in detection of leaks
<b>Odor threshold</b>	No information available
<b>pH</b>	Not applicable
<b>Melting/freezing point</b>	Not applicable
<b>Boiling point / boiling range</b>	-42.1 °C / -43.7 °F
<b>Evaporation rate</b>	Not applicable
<b>Flammability (solid, gas)</b>	Flammable Gas
<b>Lower flammability limit:</b>	2.2%
<b>Upper flammability limit:</b>	9.5%
<b>Flash point</b>	-104 °C / -156 °F
<b>Autoignition temperature</b>	450 °C / 842 °F
<b>Decomposition temperature</b>	No data available
<b>Water solubility</b>	Negligible
<b>Partition coefficient</b>	2.3
<b>Kinematic viscosity</b>	Not applicable

### Component Level Information:

Chemical Name	Molecular weight	Boiling point/range	Vapor Pressure	Vapor density (air =1)	Gas Density kg/m <sup>3</sup> @20°C	Critical Temperature
PROPANE	44.09	-42.04 °C	600 - 39000 hPa @ 20 °C	1.55	1.858	96.67 °C

## 10. STABILITY AND REACTIVITY

### Reactivity

Not reactive under normal conditions

### Chemical stability

Stable under normal conditions.

### Explosion data

**Sensitivity to Mechanical Impact** None.  
**Sensitivity to Static Discharge** Yes.

### Possibility of Hazardous Reactions

May form explosive mixtures with air.

**Conditions to avoid**

Heat, flames and sparks.

**Incompatible materials**

Oxidizing agents.

**Hazardous Decomposition Products**

Carbon monoxide. Carbon dioxide.

**11. TOXICOLOGICAL INFORMATION****Information on likely routes of exposure**

<b>Inhalation</b>	High concentrations of aliphatic hydrocarbon gases may cause CNS depression. Recent information suggest that C1-C4 aliphatic (alkane) hydrocarbon gases can cause potentially fatal cardiac arrhythmias. Cardiac sensitization to adrenalin in dogs has been noted following inhalation. In dogs, the heart is more sensitive to epinephrine induced ventricular fibrillations following exposure to 15-90% propane for 10 minutes. Ventricular fibrillations have been reported in humans following inhalation of n-butane.
<b>Skin contact</b>	Contact with evaporating liquid may cause cold burns/frostbite.
<b>Eye contact</b>	Contact with evaporating liquid may cause cold burns/frostbite.
<b>Ingestion</b>	Not an expected route of exposure.

**Information on toxicological effects**

<b>Symptoms</b>	High concentrations may cause asphyxia from lack of oxygen or act as a narcotic causing central nervous system depression. Symptoms of overexposure are dizziness, headache, tiredness, nausea, vomiting, unconsciousness, cessation of breathing
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**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

<b>Irritation</b>	Not classified.
<b>Sensitization</b>	Not classified.
<b>Germ cell mutagenicity</b>	Not classified.
<b>Carcinogenicity</b>	This product does not contain any carcinogens or potential carcinogens listed by OSHA, IARC or NTP.
<b>Reproductive toxicity</b>	Not classified.
<b>STOT - single exposure</b>	Not classified.
<b>STOT - repeated exposure</b>	Not classified.
<b>Chronic toxicity</b>	None known.
<b>Target Organ Effects</b>	Central nervous system (CNS).
<b>Aspiration hazard</b>	Not applicable.

**Numerical measures of toxicity**

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50	Inhalation LC50 (CGA P-20)
PROPANE 74-98-6	-	-	= 658 mg/L ( Rat ) 4 h	-

**Product Information**

<b>Oral LD50</b>	No information available.
<b>Dermal LD50</b>	No information available.
<b>Inhalation LC50</b>	No information available
<b>Inhalation LC50</b>	

## 12. ECOLOGICAL INFORMATION

### **Ecotoxicity**

No known acute aquatic toxicity.

### **Persistence and degradability**

No information available.

### **Bioaccumulation**

Will not bioconcentrate.

Chemical Name	Partition coefficient
PROPANE 74-98-6	2.3

## 13. DISPOSAL CONSIDERATIONS

### **Waste treatment methods**

#### **Disposal of wastes**

Do not attempt to dispose of residual waste or unused quantities. Return in the shipping container PROPERLY LABELED WITH ANY VALVE OUTLET PLUGS OR CAPS SECURED AND VALVE PROTECTION CAP IN PLACE to Messer for proper disposal.

## 14. TRANSPORT INFORMATION

**Note:** May also be shipped as UN1978 Propane.

### **DOT**

UNID no.	Not regulated UN1075
Proper shipping name	Petroleum gases, liquefied
Hazard Class	2.1
Special Provisions	T50
Description	UN1075, Petroleum gases, liquefied, 2.1
Emergency Response Guide Number	115

UNID no.	UN1075
Proper shipping name	Liquefied petroleum gases
Hazard Class	2.1
Description	UN1075, Petroleum gases, liquefied, 2.1

### **IATA**

UNID no.	UN1075
Proper shipping name	Petroleum gases, liquefied
Hazard Class	2.1
ERG Code	10L
Special Provisions	A1
Description	UN1075, Petroleum gases, liquefied, 2.1

### **IMDG**

UNID no.	UN1075
Proper shipping name	Petroleum gases, liquefied
Hazard Class	2.1
EmS-No.	F-D, S-U
Description	UN1075, Petroleum gases, liquefied, 2.1



## 15. REGULATORY INFORMATION

### INTERNATIONAL INVENTORIES

<b>TSCA</b>	Complies
<b>DSL/NDSL</b>	Complies
<b>EINECS/ELINCS</b>	Complies

**Legend:**

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory

**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List

**EINECS/ELINCS** - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

### US FEDERAL REGULATIONS

#### **SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

#### **SARA 311/312 Hazard Categories**

Should this product meet EPCRA 311/312 reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

#### **CERCLA**

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

#### **Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)**

This product does not contain any substances regulated as hazardous air pollutants (HAPS) under Section 112 of the Clean Air Act Amendments of 1990.

#### **CWA (Clean Water Act)**

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

#### **Risk and Process Safety Management Programs**

This material, as supplied, contains one or more regulated substances with specified thresholds under 40 CFR Part 68 or regulated as a highly hazardous chemical pursuant to the 29 CFR Part 1910.110 with specified thresholds:

Chemical Name	U.S. - CAA (Clean Air Act) - Accidental Release Prevention - Toxic Substances	U.S. - CAA (Clean Air Act) - Accidental Release Prevention - Flammable Substances	U.S. - OSHA - Process Safety Management - Highly Hazardous Chemicals
PROPANE		10000 lb	

### US STATE REGULATIONS

#### **California Proposition 65**

This product does not contain any Proposition 65 chemicals

#### **U.S. State Right-to-Know Regulations**

Chemical Name	New Jersey	Massachusetts	Pennsylvania

