

# Material Safety Data Sheet

## 1. Product and Company Identification

**Product Name:** Liquefied Petroleum Gas (Propane)  
**Product Use:** Many  
**Trade Name:** Liquefied Petroleum Gas  
**Synonyms:** Dimethylmethane, propylhydride, propylhydride  
**IUPAC Name:** Propane  
**Chemical Formula:** C<sub>3</sub>H<sub>8</sub>  
**Supplier:** Sunox Industrial Gases Inc.  
440 Sheldon Drive.  
Cambridge, Ontario N1T 2C1  
Tel: 1-800-342-6563  
**Emergency Contact:** CANUTEC (24hr) @ 1-613-996-6666



## 2. Composition and Ingredient Information

Component	CAS Number	Concentration [%vol/ppm]
Propane	74-86-6	100%
Ethane, Propylene, Butanes	74-84-0 / 115-07-1 / various	<1ppm
Ethyl Mercaptan	75-08-1	16-25ppm

## 3. Hazards Identification

### Emergency Overview

**DANGER!** Flammable liquid and gas under high pressure. Keep away from heat, sparks, flames and similar ignition sources. Will form explosive mixtures with air. Faintly disagreeable odour due to ethyl mercaptan odourizer. General asphyxiate and may cause dizziness, drowsiness vomiting and loss of consciousness. Self contained breathing apparatus may be required by rescue workers.

### Effect of an Acute Overexposure

Eye Contact: No harm expected from vapour, liquid may cause frostbite or other tissue damage  
Skin Contact: No harm expected from vapour, liquid may cause frostbite  
Ingestion: Not a common route of exposure, liquid contact with lips may cause frostbite  
Inhalation: General asphyxiant with effects due to lack of oxygen. May cause headaches, dizziness, drowsiness, dizziness, nausea, vomiting and unconsciousness.

### Effect of Chronic Overexposure

Eye Contact: None expected  
Skin Contact: None expected  
Ingestion: None expected  
Inhalation: Death due to suffocation, ethyl mercaptan is toxic and may pose risk

## 4. First Aid Measures

- Eye Contact: Immediately flush eyes with warm water for 15 minutes. If liquid contacts eyes consult a physician or ophthalmologist immediately.
- Skin Contact: Immediately warm frostbitten area with water and consult a physician
- Ingestion: If liquid is consumed, immediately consult a physician.
- Inhalation: Remove individual to fresh air. Give artificial respiration if not breathing. Consult a physician.

## 5. Fire Fighting Measures

Flammable?	Yes
Suitable Extinguishing Media:	CO <sub>2</sub> , chemical, water
Unsuitable Extinguishing Media:	N/A
Products of Combustion:	CO, CO <sub>2</sub> , H <sub>2</sub> O
Sensitivity to Impact:	Avoid
Sensitivity to Static Discharge:	Avoid
Flash Point:	-104°C
Autoignition Temperature:	450°C
Flammable Limits in Air, % vol, Upper	9.5
Flammable Limits in Air, % vol, Lower	2.1

### Protection of Firefighters

**DANGER!** Evacuate all personnel from area. Will form explosive mixtures with air. Cool cylinders from an extended distance with a water spray but **DO NOT** extinguish flames. Remove sources of ignition. Lingering explosive atmospheres may remain. Containers are equipped with pressure relief device to vent contents in emergency situation. If pressure relief system fails, cylinders may explode.

## 6. Accidental Release Measures

### Personal Precautions

**DANGER!** Evacuate all personnel from area. Will form explosive mixtures with air. Remove sources of ignition. Lingering explosive atmospheres may be created and travel with air currents. Use a self contained breathing apparatus if substance release is significant. Shut off leak if possible without risk. Actively ventilate area and check atmosphere with appropriate device before re-entering.

### Environmental Precautions and Containment/Cleaning Methods

None

## 7. Handling and Storage

### Handling Precautions

Properly train all employees on proper handling procedures. Handle cylinders with care and avoid jolting, dropping and impact. Always wear metatarsal shoes when handling and moving cylinders. Use an appropriate hand truck to move cylinders. Ensure valve protection cap is on whenever gas is not being drawn. Keep cylinders upright and secured to a wall or immovable object during use. Avoid damaging cylinder labels.

### Storage Precautions

Store in a secured, well ventilated and cool area below a temperature of 52°C. Store away from sunlight, fire exits, sparks, heat and high traffic areas. Firmly secure cylinders upright with the valve protection cap in place by hand. Store empty and full cylinders separately. Use a first in/first out inventory system to avoid storing cylinders for an extended period of time

Separate cylinders from oxidizing agents such as oxygen and chlorine. They must be separated by at least 6m or by a barricade at least 1.5m tall with a fire rating of at least 30 minutes. Post 'No Smoking' signs around storage area and ensure there are no other sources of ignition such as welding arcs or old wiring. Never place a cylinder where it could become part of an electrical circuit.

## 8. Exposure Controls and Personal Protection

### Exposure Limits

Component	CAS #	TLV-TWA	TLV-STEL	IDLH
Propane	74-98-6	-	-	-
Ethyl Mercaptan	75-08-1	.5ppm	0	500

Ethyl mercaptan is generally not considered hazardous at the concentrations present in propane. However, take reasonable action to avoid inhalation.

### Environmental Controls

Explosion proof general exhaust system.

### Personal Protective Equipment (PPE)

Eye / Face: Wear safety glasses or goggles when drawing gas. Always wear goggles/welding helmet with a filter screen when welding, cutting or brazing.

Skin: Wear work gloves when handling cylinders. Cover exposed skin with flame retardant material.

Respiratory: Wear an approved respirator when welding, cutting or brazing to remove hazardous fume and gas byproducts.

General Hygiene: Wash hands before and after shift to remove potentially harmful toxic residues.

Other: Always wear metatarsal shoes while handling cylinders and operating within a manufacturing environment.

Relevant Standards: Z94.1 "Industrial Protective Headwear – Performance, Selection, Care and Use"

Z94.2 "Hearing Protection Devices – Performance, Selection, Care and Use"

Z94.3.1 "Selection, Use and Care of Protective Eyewear"

Z94.4 "Selection, Use and Care of Respirators"

Z195.1 "Guideline on Selection, Care and Use of Protective Footwear"

## 9. Physical and Chemical Properties

Appearance:	Colourless Gas
Odor:	Faintly disagreeable due to ethyl mercaptan
Physical State:	Liquid / Gas
Melting Point @ 170kPa:	-187.7°C (-305.8°F)
Boiling Point @ 170kPa:	-42°C (-43.7°F)
Specific Gravity, Air @ 1atm, 0°C	1.55
Solubility:	.008g/l in water @ 20°C

Molecular Weight: 44.1g/mol  
Ignition Temperature: 470°C  
Explosion Limit, Upper, %vol 10.9  
Explosion Limit, Lower, %vol 1.7

## 10. Stability and Reactivity

Chemical Stability: Stable  
Conditions to Avoid: Exposure to heat or oxidizing agents  
Incompatible Materials: Oxidizing agents, chlorine, chlorine dioxide  
Hazardous Decomposition Products: CO  
Possibility of Hazardous Reactions: Low

## 11. Toxicological Information

### Dosage Thresholds

Component	LD50	LC50	NOAEL
Propane	-	-	-
Ethyl Mercaptan	682ppm/kg, oral, rat	4420ppm / 4 hours, rat	-

Ethyl mercaptan is toxic to the central nervous system, but not at the levels present in propane.

## 12. Ecological Information

Ecotoxicity: No data  
Degradability: No data  
Bioaccumulation: No data  
Other: No data

## 13. Disposal Considerations

Do not throw out cylinder, return to supplier from proper waste disposal procedures.

## 14. Transport Information

### TDG Regulation

Hazard Class 2.1 – Flammable Gas  
Identification Number: UN1075  
Packing Group: -  
Shipping Name: Liquefied Petroleum Gas (Propane)  
Label: 2.1

**Air Transport ICAO-TI and AITA-DGR Regulation**

ICAO/IATA Class: 2  
UN/ID Number: 1978  
Label: 2.1  
Packaging Group: -  
Shipping Name: Liquefied Petroleum Gas (Propane)

**Special Precautions**

Always transport cylinder in the upright position with the safety cap on and firmly secured. Ensure proper labeling.

**15. Regulatory Information**

**WHMIS Classification**

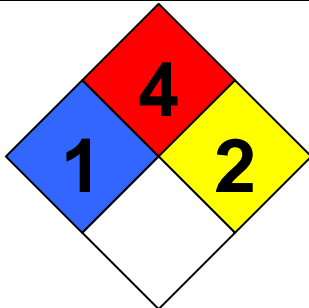


Class A: Compressed Gas



Class B-1: Flammable Gas

**HMIS / NFPA Rating**



HEALTH	1
FIRE	4
REACTIVITY	2

CEPA (Canadian Environmental Protection Act): Not listed  
DSL (Canadian Domestic Substances List): Listed

**16. Other Information**

Read all other documentation and labels associated with all other materials used in your applicable process. Get a MSDS for every material you use.

This product has been classified according to the hazard criteria of the CPR and this MSDS contains all information required by the CPR.

Be aware of the many other hazards associated with the welding, brazing and metal cutting processes. For more information refer to ANSI Z49.1 'Safety in Welding, Cutting and Allied Processes' published by the American Welding Society.

**USE PROPER CONNECTORS** accidents will occur due to faulty, old or incorrectly attached connectors. **DO NOT USE ADAPTORS.** Ensure connectors are tight and threaded properly. Properly train employees on how to connect cylinders.

The Compressed Gas Association (CGA) has a number of publications available:

AV-1	<i>Safe Handling and Storage of Compressed Gases</i>
P-1	<i>Safe Handling of Compressed Gases in Containers</i>
P-14	<i>Accident Prevention in Oxygen-Rich, Oxygen-Deficient Atmospheres</i>
SB-2	<i>Oxygen-Deficient Atmospheres</i>
SB-8	<i>Use of Oxy-Fuel Gas Welding and Cutting Apparatus</i>
V-1	<i>Compressed Gas Cylinder Valve Inlet and Outlet Connections</i>
V-7	<i>Standard Method of Determining Cylinder Valve Outlet Connections for Industrial Gas Mixtures</i>
--	<i>Handbook of Compressed Gases</i>

Compressed Gas Association  
4221 Walney Road, 5th Floor  
Chantilly, VA 20151  
P: (703) 788-2700  
F: (703) 961-1831  
cga@cganet.com, www.cganet.com

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