

## SECTION 1 – PRODUCT INFORMATION

**Product Name:** Propane  
**Trade Name:** LPG (Liquified Petroleum Gas), LP-Gas  
**Chemical Formula:** C<sub>3</sub>H<sub>8</sub>

WHMIS CLASSIFICATION  
 Class A - Compressed Gas  
 Class B, Division 1 - Flammable Gas

**Supplier:** Superior Propane Inc.  
 1111 - 49th Avenue N.E.  
 Calgary, AB T2E 8V2  
**Business:** (403) 730-7500

**Local Market**  
**Emergency Number:** \_\_\_\_\_  
 (Non Medical)

**Application and Use:** Propane is commonly used as a fuel for heating, cooking, automobiles, forklift trucks, crop drying and welding and cutting operations. Propane is used in industry as a refrigerant, solvent and as a chemical feedstock.

## SECTION 2 – HAZARDOUS INGREDIENTS

| COMPONENTS                       | CAS NO.   | % Volume (v/v) | LD50           |
|----------------------------------|-----------|----------------|----------------|
| Propane                          | 74 -98-6  | 90% - 99%      | Not Applicable |
| Propylene                        | 115 -07-1 | 0% - 5%        | Not Applicable |
| Ethane                           | 74 -84-0  | 0% - 5%        | Not Applicable |
| Butane and heavier hydro carbons | 106 -97-8 | 0% - 2.5%      | Not Applicable |

Occupational Exposure Limit:

Based upon animal test data, the acute toxicity of this product is expected to be inhalation: 4 hour LC50 = 280,000 ppm (Rat).

**Note:** Composition is typical for HD-5 Propane per The Canadian General Standard Board CGSB 3.14 National Standard of Canada. Exact composition will vary from shipment to shipment.

## SECTION 3 – CHEMICAL AND PHYSICAL DATA

**Form:** Liquid and vapour while stored under pressure.  
**Boiling Point:** -42°C @ 1 atm.  
**Freezing Point:** -188°C  
**Evaporation Rate:** Rapid (Gas at normal ambient conditions).  
**Vapour Pressure:** 1435 kPa (maximum) @ 37.8°C  
**Vapour Density:** 1.52 (Air = 1)  
**Coefficient of Water/Oil Distribution:** Not available.  
**pH:** Not available.

**Solubility in water:** Slight, 6.1% by volume @ 17.8°C

**Specific Gravity:** 0.51 (water = 1)

**Appearance/Odour:** Colourless liquid and vapour while stored under pressure. Colourless and odourless gas in natural state at any concentration. Commercial propane has an odourant added, ethyl mercaptan, which has an odour similar to boiling cabbage.\*

**Odour Threshold:** 4800 ppm

\* With proper handling, transportation and storage, adding a chemical odourant such as eth-merc has proven to be a very effective warning device, but all odourants have certain limitations. The effectiveness of the odourant may be diminished by a person's sense of smell, by competing odours and by oxidation which may cause a potentially dangerous situation.

## SECTION 4 – FIRE OR EXPLOSION HAZARD

**Flash Point:** -103.4°C  
**Method:** Closed cup.  
**Flammable Limits:** Lower 2.4%, Upper 9.5%  
**Auto Ignition Temperature:** 432°C  
**Products Evolved Due To Heat Or Combustion:** Carbon monoxide can be produced when primary air and secondary air are deficient while combustion is taking place.  
**Fire and Explosive Hazards:** Explosive air-vapour mixtures may form if allowed to leak to atmosphere.  
**Sensitivity To Impact:** No.  
**Sensitivity To Static Discharge:** Yes.

**Fire Extinguishing Precautions:** Use water spray to cool exposed cylinders or tanks. Do not extinguish fire unless the source of the escaping gas that is fueling the fire can be turned off. Fire can be extinguished with carbon dioxide and/or dry chemical (BC). Container metal shells require cooling with water to prevent flame impingement and the weakening of metal. If sufficient water is not available to protect the container shell from weakening, the area will be required to be evacuated. If gas has not ignited, liquid or vapour may be dispersed by water spray or flooding.

**Special Fire Fighting Equipment:** Protective clothing, hose monitors, fog nozzles, self-contained breathing apparatus.

## SECTION 5 – REACTIVITY DATA

**Stability:** Stable.  
**Conditions To Avoid:** Keep separate from oxidizing agents. Gas explodes spontaneously when mixed with chloride dioxide.  
**Incompatibility:** Remove sources of ignition and observe distance requirements for storage tanks from combustible material, drains and openings to building.

**Hazardous Decomposition Products:** Deficient primary and secondary air can produce carbon monoxide.

**Hazardous Polymerization:** Will not occur.

## SECTION 6 – TOXICOLOGICAL PROPERTIES OF MATERIAL

### ROUTES OF ENTRY:

**Inhalation:** Simple asphyxiant. No effect at concentrations of 10,000 ppm (peak exposures). Higher concentrations may cause central nervous system disorder and/or damage. Lack of oxygen may cause dizziness, loss of coordination, weakness, fatigue, euphoria, mental confusion, blurred vision, convulsions, breathing failure, coma and death. Breathing high vapour concentrations (saturated vapours) for a few minutes may be fatal. Saturated vapours may be encountered in confined spaces and/or under conditions of poor ventilation. Avoid breathing vapours or mist.

**Skin and Eye Contact:** Exposure to vapourizing liquid may cause frostbite (cold burns) and permanent eye damage.

**Ingestion:** Not considered to be a hazard.

**Acute Exposure:** The acute toxicity of this product is expected to be inhalation: 4 hour LC50=280,000ppm (Rat).

**Chronic Exposure:** There are no reported effects from long term low level exposure.

**Sensitization to Product:** Skin–unknown, Respiratory–unknown.

**Occupational Exposure Limits:** American Conference of Governmental Industrial Hygienists (ACGIH) lists as a simple asphyxiant. ACGIH TLV: 1000 ppm.

**Carcinogenicity, Reproductive Toxicity, Teratogenicity, Mutagenicity:** No effects reported.

## SECTION 7 – PREVENTIVE MEASURES

**Eyes:** Safety glasses, are recommended when transferring product.

**Skin:** Insulated gloves required if contact with liquid or liquid cooled equipment is expected. Wear gloves and long sleeves when transferring product.

**Inhalation:** Where concentration in air would reduce the oxygen level below 18% air or exceed occupational exposure limits in section 6, self-contained breathing apparatus is required.

**Ventilation:** Explosion proof ventilation equipment required in confined spaces.

## SECTION 8 – EMERGENCY AND FIRST AID PROCEDURES

### FIRST AID:

**Eyes:** Should eye contact with liquid occur, flush eyes with lukewarm water for 15 minutes. Obtain immediate medical care.

**Skin:** In case of “Cold Burn” from contact with liquid, immediately place affected area in lukewarm water and keep at this temperature until circulation returns. If fingers or hands are frostbitten, have the victim hold his hand next to his body such as under the armpit. Obtain immediate medical care.

**Ingestion:** None considered necessary.

**Inhalation:** Remove person to fresh air. If breathing is difficult or has stopped, administer artificial respiration. Obtain immediate medical care.

### SPILL OR LEAK:

Eliminate leak if possible.

Eliminate source of ignition.

Ensure cylinder is upright.

Disperse vapours with hose streams using fog nozzles. Monitor low areas as propane is heavier than air and can settle into low areas. Remain upwind of leak. Keep people away. Prevent vapour and/or liquid from entering into sewers, basements or confined areas.

## SECTION 9 – TRANSPORTATION, HANDLING AND STORAGE

- Transport and store cylinders and tanks secured in an upright position in a ventilated space away from ignition sources (so the pressure relief valve is in contact with the vapour space of the cylinder or tank).
- Cylinders that are not in use must have the valves in the closed position and be equipped with a protective cap or guard.
- Do not store with oxidizing agents, oxygen, or chlorine cylinders.

- Empty cylinders and tanks may contain product residue. Do not pressurize, cut, heat or weld empty containers.
- Transport, handle and store according to applicable federal and provincial codes and regulations.

### Transportation of Dangerous Goods (TDG)

- TDG Classification: Flammable Gas 2.1
- TDG Shipping Name: Liquified Petroleum Gas (Propane)
- TDG Special Provisions: 56, 90, 102
- PIN Number: UN1075

## SECTION 10 – PREPARATION

Superior Propane Inc., Regulations & Safety Department. (403) 730-7500 Date prepared: November 2001.  
Supersedes: September 1999.

The information contained herein is believed to be accurate. It is provided independently of any sale of the product. It is not intended to constitute performance information concerning the product. No express warranty, implied warranty of merchantability or fitness for a particular purpose is made with respect to the product information contained herein.