

**SECTION 1 – PRODUCT INFORMATION**

|                      |   |                               |  |
|----------------------|---|-------------------------------|--|
| Product Name:        | Propane   | Supplier:                     | Superior Propane<br>A Division of Superior Plus LP<br>1111 - 49th Avenue N.E.<br>Calgary, AB T2E 8V2<br>Business: (403) 730-7500 |
| Trade Name:          | LPG (Liquefied Petroleum Gas), LP-Gas                         |                               |  |
| Chemical Formula:    | C <sub>3</sub> H <sub>8</sub>                                 |                               |  |
| WHMIS Classification | Class A – Compressed Gas<br>Class B, Division 1 – Flammable G | 24-Hour<br>Emergency Contact: | Canutec (613) 996-6666   |

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) | LD 50 (RAT, ORAL) |
|----------------------------------|----------|----------------|-------------------|
| 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 | pH:                  | Not available   |
| Boiling Point:                         | -42°C @ 1 atm                                 | Solubility in Water: | Slight, 6.1% by volume @ 17.8°C   |
| Freezing Point:                        | -188°C  | Specific Gravity:    | 0.51 (water = 1)  |
| Evaporation Rate:                      | Rapid (Gas at normal ambient conditions)      | 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. |
| Vapour Pressure:                       | 1435 kPa (maximum) @ 37.8°C                   |                      |   |
| Vapour Density:                        | 1.52 (Air = 1)                                |                      |   |
| Coefficient of Water/Oil Distribution: | Not available                                 | Odour Threshold:     | 4800 ppm  |

With proper handling, transportation and storage, adding a chemical odourant such as ethyl mercaptan 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   | 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 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. |
| Method:                          | Closed cup   |                                  |   |
| Flammable Limits:                | Lower 2.4%, Upper 9.5%   |                                  |   |
| Auto Ignition Temperature:       | 432 °C   |                                  |   |
| Hazardous Combustion Products:   | 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 allowed to leak to atmosphere.  | Special Fire Fighting Equipment: | Protective clothing, hose monitors, fog nozzles, self-contained breathing apparatus material, drains and openings to building   |
| Sensitivity to Impact:           | No   |                                  |   |
| Sensitivity to Static Discharge: | Yes  |                                  |   |

**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

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: Skin Contact, Eye Contact, Inhalation

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: Contact with Liquefied Petroleum Gas may cause frostbite or cold burns. Propane acts as a simple asphyxiant as oxygen content in air is displaced by the propane. At increasing concentration levels, propane may cause dizziness, headaches, loss of coordination, fatigue, unconsciousness and death.

Chronic Exposure: No reported effects from long term low level exposure.

Sensitization to Product: Not known to be a sensitizer.

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.

Other Toxicological Effects: None

## SECTION 7 – PREVENTATIVE MEASURES

Eyes: Safety glasses or chemical goggles 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: Use in well-ventilated areas. Use with explosion proof mechanical ventilation in confined spaces or poorly ventilated areas.

## SECTION 8 – EMERGENCY AND FIRST AID PROCEDURES

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.

Transportation of Dangerous Goods (TDG)  
TDG Classification: Flammable Gas 2.1

- 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.

TDG Shipping Name: Liquefied Petroleum Gas (Propane)  
PIN Number: UN1075

## SECTION 10 – PREPARATION INFORMATION

Prepared by: Superior Propane  
Health Safety and Environment Team

Telephone: (403) 730-7500  
Revision: January 17, 2014  
Supersedes: January 17, 2011

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.