



MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

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|---------------------------------|--|
| Material name | PROPANE- LIQUEFIED PETROLEUM GAS |
| Version # | 01 |
| Issue date | 07-19-2012 |
| Revision date | - |
| Supersedes date | - |
| CAS # | Mixture |
| Product code | 127 |
| Product use | Various. |
| Synonym(s) | Unstented Propane * Stented Propane * HD-5 Propane * Standard Propane |
| Manufacturer information | |
| Manufacturer | Consumers' Co-operative Refineries Limited |
| Address | P.O. Box 260; 9th Avenue North Regina, SK S4P 3A1 Canada (306) 721-5353 |
| Telephone | |
| Supplier | Federated Co-operatives Limited |
| Address | P.O. Box 1050, 401 - 22nd Street East Saskatoon SK S7K 3M9 Canada (306) 244-3447 |
| Telephone | |
| 24 Hour Emergency | (613) 996-6666 - Canutec |
| Telephone | |

2. Hazards Identification

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|---------------------------------|--|
| Physical state | Gas. |
| Appearance | Colorless liquefied gas. |
| Emergency overview | DANGER Extremely flammable gas. High pressure gas. Gas reduces oxygen available for breathing. Contact with liquefied gas might cause frostbites, in some cases with tissue damage. In a fire or if heated, a pressure increase will occur and the container may burst or explode. Static accumulating flammable materials can become electrostatically charged even in bonded and grounded equipment. Sparks may ignite material and vapor may cause flash fire (or explosion). |
| OSHA regulatory status | This product is hazardous according to OSHA 29 CFR 1910.1200. |
| Potential health effects | |
| Routes of exposure | Inhalation. Eyes. Skin. |
| Eyes | Exposure to rapidly expanding gas or vaporizing liquid may cause frostbite ("cold burn"). |
| Skin | Exposure to rapidly expanding gas or vaporizing liquid may cause frostbite ("cold burn"). |
| Inhalation | Suffocation (asphyxiant) hazard - if allowed to accumulate to concentrations that reduce oxygen below safe breathing levels. Nasal and respiratory tract irritation, central nervous system effects including excitation, euphoria, contracted eye pupils, dizziness, drowsiness, blurred vision, fatigue, nausea, headache, loss of reflexes, tremors, convulsions, seizures, loss of consciousness, coma, respiratory arrest and sudden death could occur as a result of long term and/or high concentration exposure to vapors. May also cause anemia and irregular heart rhythm. |
| Ingestion | This material is a gas under normal atmospheric conditions and ingestion is unlikely. |
| Target organs | Respiratory tract. Eyes. Central nervous system. |
| Chronic effects | May cause central nervous system effects. Components have been shown to be weak cardiac sensitizers which can result in cardiac arrhythmia and ventricular fibrillation. |
| Potential environmental effects | Not expected to be harmful to aquatic organisms. |

3. Composition / Information on Ingredients

| Components | CAS # | Percent |
|-------------|---------|---------|
| Propane | 74-98-6 | 100 |
| Ethanethiol | 75-08-1 | 0.005 |

4. First Aid Measures

First aid procedures

Eye contact

Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.

Skin contact

Wash frost-bitten areas with plenty of water. Do not remove clothing. Get medical attention immediately.

Inhalation

Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Call a physician or poison control center immediately.

Ingestion

Ingestion is not a typical route of exposure for gases or liquefied gases.

Notes to physician

Treat symptomatically.

5. Fire Fighting Measures

Flammable properties

Extremely flammable gas. Gas forms mixtures with air which can catch fire and burn with explosive violence. Vapors are heavier than air and invisible mixture spreads easily and may accumulate in low or confined areas, travel considerable distance to source of ignition and flash back. Runoff to sewer may create fire or explosion hazard.

Extinguishing media

Suitable extinguishing media

Dry chemical, CO2, water spray, fog, or foam.

Fire fighting equipment/instructions

Self-contained breathing apparatus, operated in positive pressure mode and full protective clothing must be worn in case of fire.

Move container from fire area if it can be done without risk.

Do not extinguish fires unless gas flow can be stopped safely; explosive re-ignition may occur. Promptly isolate the scene by removing all persons from the vicinity of the incident. No action shall be taken involving any personal risk or without suitable training. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus. Stop flow of material. Use water to keep fire exposed containers cool and to protect personnel effecting shutoff. If a leak or spill has not ignited, use water spray to disperse the vapors and to protect personnel attempting to stop leak. Prevent runoff from fire control or dilution from entering streams, sewers or drinking water supply.

Hazardous combustion products

Carbon oxides.

6. Accidental Release Measures

Personal precautions

Evacuate the area promptly. No action shall be taken involving any personal risk or without suitable training. Keep unnecessary personnel away.

Ensure adequate ventilation. In case of inadequate ventilation, use respiratory protection. Wear appropriate personal protective equipment (See Section 8).

Environmental precautions

Should not be released into the environment. Prevent further leakage or spillage if safe to do so. Prevent from entering into soil, ditches, sanitary sewers, waterways and/or groundwater.

Methods for cleaning up

Ventilate well, stop flow of gas or liquid if possible. Immediately contact emergency personnel.

7. Handling and Storage

Handling

Eliminate sources of ignition. Avoid spark promoters. Ground/bond container and equipment. These alone may be insufficient to remove static electricity.

Wear appropriate personal protective equipment (See Section 8). Eating, drinking, and smoking should be prohibited in areas where this material is handled, stored, and processed. Do not breathe gas. Do not get in eyes, on skin, on clothing. Use only with adequate ventilation.

Storage

Store in accordance with local, regional, national, and international regulations. Secure cylinders in an upright position at all times, close all valves when not in use. Store in a cool, dry, well-ventilated place. Keep container tightly closed and sealed until ready for use. Protect cylinders from damage.

8. Exposure Controls / Personal Protection

Occupational exposure limits

US. ACGIH Threshold Limit Values

| Components | Type | Value |
|-----------------------|------|----------|
| Propane (CAS 74-98-6) | TWA | 1000 ppm |

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

| Components | Type | Value |
|-----------------------|------|------------------------|
| Propane (CAS 74-98-6) | PEL | 1800 mg/m3 1000 ppm |

Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)

| Components | Type | Value |
|-----------------------|------|----------|
| Propane (CAS 74-98-6) | TWA | 1000 ppm |

Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)

| Components | Type | Value |
|-----------------------|------|----------|
| Propane (CAS 74-98-6) | TWA | 1000 ppm |

Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents)

| Components | Type | Value |
|-----------------------|------|----------|
| Propane (CAS 74-98-6) | TWA | 1000 ppm |

Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment)

| Components | Type | Value |
|-----------------------|------|------------------------|
| Propane (CAS 74-98-6) | TWA | 1800 mg/m3 1000 ppm |

Engineering controls

Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. The engineering controls also need to keep gas, vapor, or dust concentrations below any lower explosive limits.

Personal protective equipment

Eye / face protection

Wear approved safety glasses or goggles.

Skin protection

Wear protective clothing appropriate for the risk of exposure.

Respiratory protection

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.

General hygiene considerations

Do not eat, drink or smoke when using the product. Wash thoroughly after handling. Provide eyewash station and safety shower. Handle in accordance with good industrial hygiene and safety practices.

9. Physical & Chemical Properties

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|--|---|
| Appearance | Colorless liquefied gas. |
| Physical state | Gas. |
| Form | Compressed liquefied gas. |
| Color | Colorless |
| Odor | Boiling cabbage if stench. |
| Odor threshold | 4800 ppm |
| pH | Not available. |
| Vapor pressure | 1034.1 - 1241 kPa |
| Vapor density | 1.6 |
| Boiling point | -43.6 °F (-42 °C) |
| Melting point/Freezing point | -292 °F (-180 °C) / -302.6 °F (-185.89 °C) |
| Solubility (water) | 6.5 % v/v (20 °C) |
| Specific gravity | 0.58 |
| Flash point | -150 °F (-101.1 °C) Pensky-Martens Closed Cup |
| Flammability limits in air, upper, % by volume | 9.5 % |

| | |
|--|---------------------------|
| Flammability limits in air, lower, % by volume | 2.2 % |
| Auto-ignition temperature | 809.6 °F (432 °C) |
| VOC | 100 % |
| Evaporation rate | > 1 (Ether (anhydrous)=1) |
| Molecular weight | 44.11 g/mol |
| Molecular formula | C3-H8 |
| Other data | |
| Critical temperature | 205.9 °F (96.6 °C) |

10. Chemical Stability & Reactivity Information

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|------------------------------------|--|
| Chemical stability | Stable under normal temperature conditions and recommended use. |
| Conditions to avoid | In a fire or if heated, a pressure increase will occur and the container may burst or explode. |
| Incompatible materials | Oxidizing agents. Reducing agents. Acids. Alkalis. |
| Hazardous decomposition products | None known. |
| Possibility of hazardous reactions | Polymerization will not occur. |

11. Toxicological Information

Toxicological data

| Components | Species | Test Results |
|-----------------------|--|-----------------------------|
| Propane (CAS 74-98-6) | | |
| Acute | | |
| Inhalation | | |
| LC50 | Rat | > 1442.847 mg/l, 15 Minutes |
| Sensitization | Not available. | |
| Acute effects | Suffocation (asphyxiant) hazard - if allowed to accumulate to concentrations that reduce oxygen below safe breathing levels. Exposure to rapidly expanding gas or vaporizing liquid may cause frostbite ("cold burn"). | |
| Chronic effects | May cause central nervous system effects. | |

12. Ecological Information

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|--------------------------------|--|
| Ecotoxicity | Not expected to be harmful to aquatic organisms. |
| Persistence and degradability | Not available. |
| Bioaccumulation / Accumulation | Not available. |
| Partition coefficient | |
| Propane | 2.36 |

13. Disposal Considerations

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|-----------------------|--|
| Waste codes | D001: Waste Flammable material with a flash point <140 °F |
| Disposal instructions | Dispose in accordance with all applicable regulations. Empty containers may contain product residues. Do not puncture or incinerate even when empty. This material and/or its container must be disposed of as hazardous waste. Return the empty cylinder to the supplier. |

14. Transport Information

DOT

Basic shipping requirements:

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|----------------------|---------|
| UN number | UN1978 |
| Proper shipping name | Propane |
| Hazard class | 2.1 |

Additional information:

| | |
|----------------------|---------|
| Special provisions | 19, T50 |
| Packaging exceptions | 306 |

| | |
|---------------------|----------|
| Packaging non bulk | 304 |
| Packaging bulk | 314, 315 |
| Reportable quantity | 100 |

IATA

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|----------------------------|---------|
| UN number | UN1978 |
| UN proper shipping name | Propane |
| Transport hazard class(es) | 2.1 |
| ERG code | 10L |

IMDG

| | |
|----------------------------|----------|
| UN number | UN1978 |
| UN proper shipping name | PROPANE |
| Transport hazard class(es) | 2.1 |
| EmS No. | F-D, S-U |

TDG

| | |
|----------------------|---------|
| Proper shipping name | PROPANE |
| Hazard class | 2.1 |
| UN number | UN1978 |
| Marine pollutant | No |

15. Regulatory Information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

CERCLA (Superfund) reportable quantity (lbs) (40 CFR 302.4)

Propane: 100

Superfund Amendments and Reauthorization Act of 1986 (SARA)

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|--------------------------|---|
| Hazard categories | Immediate Hazard - Yes Delayed Hazard - No Fire Hazard - Yes Pressure Hazard - Yes Reactivity Hazard - No |
|--------------------------|---|

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| Section 302 extremely hazardous substance (40 CFR 355, Appendix A) | Yes |
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|-------------------------------------|-----|
| Section 311/312 (40 CFR 370) | Yes |
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| Clean Water Act (CWA) Section 112(r) (40 CFR 68.130) | Hazardous substance |
|---|---------------------|

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|--|----------------|
| Drug Enforcement Administration (DEA) (21 CFR 1308.11-15) | Not controlled |
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Canadian regulations This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

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| WHMIS status | Controlled |
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|-----------------------------|--|
| WHMIS classification | A - Compressed Gas B1 - Flammable Gases |
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WHMIS labeling



Inventory status

| Country(s) or region | Inventory name | On inventory (yes/no)* |
|-----------------------------|--|------------------------|
| Australia | Australian Inventory of Chemical Substances (AICS) | Yes |
| Canada | Domestic Substances List (DSL) | Yes |
| Canada | Non-Domestic Substances List (NDSL) | No |
| China | Inventory of Existing Chemical Substances in China (IECSC) | Yes |
| Europe | European Inventory of Existing Commercial Chemical Substances (EINECS) | Yes |
| Europe | European List of Notified Chemical Substances (ELINCS) | No |
| Japan | Inventory of Existing and New Chemical Substances (ENCS) | Yes |
| Korea | Existing Chemicals List (ECL) | Yes |
| New Zealand | New Zealand Inventory | Yes |
| Philippines | Philippine Inventory of Chemicals and Chemical Substances (PICCS) | Yes |
| United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory | Yes |

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s)

State regulations

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

Not listed.

US - New Jersey RTK - Substances: Listed substance

Propane (CAS 74-98-6) Listed.

US. Massachusetts RTK - Substance List

Propane (CAS 74-98-6) Listed.

US. New Jersey Worker and Community Right-to-Know Act

Propane (CAS 74-98-6) 500 LBS

US. Pennsylvania RTK - Hazardous Substances

Propane (CAS 74-98-6) Listed.

16. Other Information

Further information

HMIS® is a registered trade and service mark of the NPCA.

HMIS® ratings

Health: 1
Flammability: 4
Physical hazard: 0

NFPA ratings

Health: 1
Flammability: 4
Instability: 0

Disclaimer

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 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.