

MATERIAL SAFETY DATA SHEET

SECTION I - PRODUCT INFORMATION

Product Name: HD-5 Propane

Trade Name: LPG (Liquefied Petroleum Gas)

Chemical Formula: C₃H₈

Supplier: EDPRO Energy Group Inc.

980 Green Valley Road

London, Ontario N6N 1E3

Bus. Tel: 519-690-0000 (24 hour)

Uses and Occurrence: Propane is widely used for heating, cooking, and refrigeration and in forklifts and some automobiles as an alternative to gasoline. It is also used as a fuel in welding and cutting operations. Propane is used in industry as a chemical feedstock, solvent, and refrigerant.

SECTION II - HAZARDOUS INGREDIENTS

COMPONENTS	CAS REGISTRY NO.	PROPORTION OF PRODUCT	LC50	LD50
Propane	74986	95% - 98%	Not Applicable	Not Applicable
Ethane	74840	3% - 5%	Not Applicable	Not Applicable
Butane	791068	1% - 3%	Not Applicable	Not Applicable
Iso-Butane	75285	0.1% - 0.3%	Not Applicable	Not Applicable
Methane	74828	0.1% - 0.2%	Not Applicable	Not Applicable

Note: Composition given is typical for HD-5 Propane, exact composition will vary from shipment to shipment.

SECTION III - CHEMICAL AND PHYSICAL DATA

Form: While stored - liquid and/or vapour

Boiling Point: -42°C @ 760 mmHg or 1 atm.

Freezing Point: -188°C

Evaporation Rate: Rapid (Gas at Normal Ambient Conditions)

Vapour Pressure: 1,013 (kPa) @ 26.0°C

Vapour Density: 1.52 (Air=1)

Coefficient of Water/Oil Distribution: Not available

PH: Not available

Solubility in Water: 6.1% by Volume @ 17.8°C and 753 mmHg

Specific Gravity: 0.51 (WATER=1)

Appearance: Colourless liquid and vapour while stored. Colourless and odourless gas in natural state at any concentration. Commercial propane has an odourant added which is commonly ethyl mercaptan which has an odour similar to boiling cabbage or rotten eggs.

Odour Threshold: 4800 PPM

SECTION IV - FIRE OR EXPLOSION HAZARD DATA

Flash Point: -103.4°C Method: Closed Cup

Flammable Limits: Lower 2.4%, Upper 9.5%

Auto Ignition Temperature: 480°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.

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.

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

SECTION V - REACTIVITY DATA

Stability: Stable

Conditions To Avoid: Keep separate from oxidizing agents. Gas explodes spontaneously when mixed with chlorine dioxide.

Incompatibility: Remove sources of ignition and observe distance requirements from combustible material, drains and opening to buildings.

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

Hazardous Polymerization: Will not occur.

SECTION VI - TOXICOLOGICAL PROPERTIES OF MATERIAL

ACUTE EXPOSURE

Eyes: As a gas, none. Liquid causes "Cold Burns".
Respiratory System: Little physiological effect at concentrations below 10,000 PPM. Higher concentrations may cause dizziness and unconsciousness due to asphyxiation.
Chronic Exposure: There are no reported effects from long-term low-level exposure.
Other: Liquid can cause burns and frostbite if in direct contact with skin.
Sensitization Properties: Skin - Unknown,
Respiratory: Unknown.
Carcinogenicity: Not determined.
Reproductive Effects: Not determined
Oral: Not applicable for gas.

MEDIAN LETHAL DOSE:

Inhalation: Not determined.
Dermal: Not applicable for gas.
Other: Not determined.
IRRITATION INDEX:
Skin: No appreciable effect (gas)
Eyes: No appreciable effect (gas)
Symptoms Of Exposure: Above 10,000 PPM: Dizziness, stupor, unconsciousness. American Conference of Governmental Industrial Hygienists (ACGIH) classifies propane as an asphyxiant, there is no recommended "Threshold Limit Value" (TLV).
Teratogenicity: Not determined.
Mutagenicity: Not determined.

SECTION VII - OCCUPATIONAL CONTROL PROCEDURES

Eyes: Safety glasses, goggles, or face shield required when transferring product.
Skin: Insulated gloves if contact with liquid or liquid cooled equipment is expected.

Inhalation: In atmosphere, where the concentration of propane would reduce oxygen level below 18% in inhaled air, self contained breathing apparatus required.
Ventilation: Explosion proof ventilation equipment.

SECTION VIII - 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, watch for low area, as propane is heavier than air and can settle in low areas. Remain upwind of leak, keep people away.
Prevent vapour and/or liquid from entering into sewers, basements or confined areas.

SECTION IX - TRANSPORTATION, HANDLING AND STORAGE

- ♣ Transport and store cylinders and tanks secured in an upright position in a ventilated space.
- ♣ Cylinders that are not in use must have the valves in the closed position, and cylinders with a capacity of 45 lbs or less must be equipped with a protective cap or plug.
- ♣ Transport, handle and store according to applicable federal and provincial regulations (CGA B149.2).
- ♣ Cylinders not in use must be stored outdoors at least 1 m from a building opening.

- ♣ Store at least 3 m from a source of ignition
- ♣ Store at least 6 m from other flammable liquids, oxidizing agents, oxygen or chlorine cylinders
- ♣ TDG Classification: 2.1
- ♣ TDG Shipping Name: Liquefied Petroleum Gas (Propane)
- ♣ TDG Special Provisions: 102
- ♣ UN/NA: 1075
- ♣ WHMIS Classification
Class A - Compressed Gas
Class B Division 1 - Flammable Gas

SECTION X - PREPARATION INFORMATION



Prepared by: EDPRO Energy Group Inc.
980 Green Valley Road
London, Ontario N6N 1E3

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, or implied warranty of merchantability or fitness for a particular purpose is made with respect to the product information contained herein.