

SAFETY DATA SHEET

EFFECTIVE SEPTEMBER 2015



EDPO LLC & Affiliates:

Lindens Propane, Expo Propane, Ludwig Propane, BrightStar & Fuels, Quality Propane and WOC.

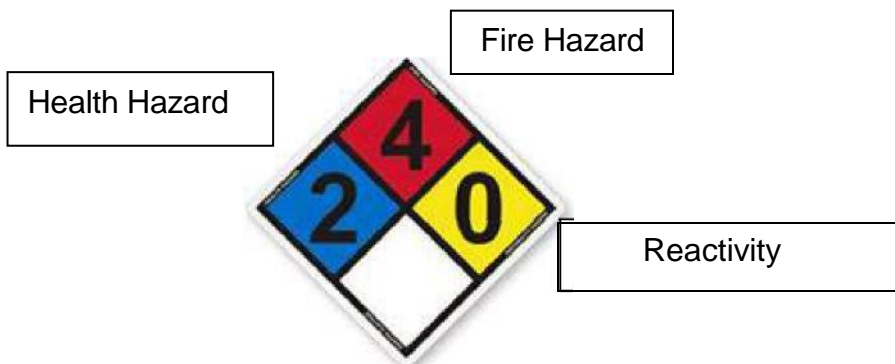
SECTION 1: PRODUCT & COMPANY IDENTIFICATION

| | |
|---------------------|---|
| Product Name: | Commercial Odorized Propane |
| Chemical Name: | Propane (C ₃ H ₈) |
| Chemical Family: | Petroleum Hydrocarbon |
| Common Names: | Liquefied Petroleum Gas, LP-Gas, LPG, Bottle Gas |
| Intended Use: | Propane is a liquid fuel |
| Distributor: | EDPO LLC, 200 W. Madison St., Suite 980, Chicago, IL. 60606 |
| Emergency Response: | CHEMTREC (800) 424-9300 |

SECTION 2: CHEMICAL HAZARD CLASSIFICATION & WARNING INFORMATION

NFPA CLASSES:

- 4 - Severe
- 3 - Serious
- 2 - Moderate
- 1 - Slight
- 0 - Minimal



*Ref. NFPA 704

WHAT IS PROPANE?

Propane (also called LPG-Liquefied Petroleum Gas or LP-Gas) is a liquid fuel stored under pressure. In most systems, propane is vaporized to a gas before it leaves the tank. Propane is highly flammable when mixed with air (oxygen) and can be ignited by many sources, including open flames, smoking materials, electrical sparks and static electricity. Severe “freeze burn” or frostbite can result if propane liquid comes in contact with your skin.

PROPANE IS A SIMPLE ASPHYXIANT.

PROPANE IS FLAMMABLE.

Flammable Gas under pressure – Keep away from sources of ignition such as heat, sparks or flame. Vapor is heavier than air and may collect in low-lying areas.

SECTION 3: COMPOSITION / INGREDIENT INFORMATION

| COMPONENTS | CAS NO. | |
|-----------------|-----------|--|
| PROPANE | 74-98-6 | * |
| PROPYLENE | 115-07-1 | * |
| BUTANES | 106-97-8 | 2.5% |
| SULPHUR | 7704-34-9 | 185 ppm with no discoloration of Lead Acetate paper** |
| RESIDUAL MATTER | | 0.05 ml after boil off of 100 ml liquid sample** |
| ODORANT(S) | Various | Odor concentration detectable in air of not less than one-fifth of the lower limit of flammability per NFPA 58 |
| CORROSIVES | | Not to exceed #1 grade copper strip test** |

*Combined constituents comprise a minimum 97.45% of the total weight under Gas Processors Association (GPA) Standard 2140-97.

**Based on American Society of Testing and Materials (ASTM) Standard D1835-91.

SECTION 4: FIRST AID MEASURES

Eye Contact: Although propane vapor is generally non-irritating, pressurized gas may inflict mechanical injury to the eye. Direct contact with liquid propane can cause freeze burns and resultant swelling of the eye. In case of contact with eyes, remove contact lenses if present and easy to do so, immediately flush with clean, low-pressure water, for a minimum of 15 minutes.

Skin Contact: Contact with liquid propane can cause freeze burns similar to frostbite. Remove saturated clothing, shoes and jewelry immediately. Do not remove clothing that adheres due to freezing. Affected body parts should be gently flushed with or immersed in lukewarm water for 15 minutes. Seek medical attention.

Ingestion: Deemed unlikely.

Inhalation: Simple asphyxiant. Extreme over exposure may cause dizziness, headache, disorientation, excitability, fatigue, coughing, vomiting, anesthesia, unconsciousness and death. Move victim away from source and into fresh air. Seek medical attention - call 911 or Emergency Medical Services. If breathing difficulties develop, qualified personnel may administer oxygen. If breathing or heartbeat cease, artificial respiration or cardiopulmonary resuscitation should be started immediately.

SECTION 5: FIRE FIGHTING MEASURES

PROPANE IS EXTREMELY FLAMMABLE. Propane will be easily ignited by heat, sparks or flame. Propane will form explosive mixtures with air. Vapors from liquefied gas are heavier than air and will spread at low levels (along the ground). Vapors may travel to source of ignition and flash back. Containers may explode when heated. Ruptured cylinders may propel/rocket.

Clear and evacuate the area - only properly trained and protected emergency response personnel shall be permitted in the area. Do not extinguish a leaking gas fire unless the leak can be stopped.

Extinguishing Media: Class B fire-extinguishing media such as HALON, CO₂ or dry chemical can be used. Water spray or fog is appropriate for surrounding areas. Do not extinguish flame until source of gas is shut off. Only those with specialized training should attempt firefighting. For further information, refer to NPGA "Propane Emergencies" Text #7220.

For fires involving tanks:

- Fight fire from maximum distance or use unattended hose.
- Cool containers with flooding quantities until well after fire is out.
- Do not direct water at source of leak or safety devices; icing may occur.
- Withdraw immediately in case of rising sound from venting safety devices or tank discoloration.
- ALWAYS stay away from tanks engulfed in fire.
- For massive fire, use unattended hose holders or monitor nozzles; if this is possible, withdraw from area and allow fire to burn.

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SECTION 6: ACCIDENTAL RELEASE MEASURES

In the event of an accidental release or spill out of doors, these actions should be taken: Evacuate immediate area. Eliminate all possible sources of ignition including heat, sparks and open flame. Provide maximum ventilation and shut off source(s) of leak if possible to do so safely. If cylinder or container is leaking, contact the local fire department or the nearest EDPO LLC supplier. Never enter a vapor (white) cloud.

In the event of an accidental release of propane:

- Eliminate all sources of ignition (no smoking, flares, sparks or flames in immediate area).
- Ground all equipment used for handling product.
- Do not touch or walk through the spilled material.
- Stop leak source if this can be done without risk.
- If possible, position leaking containers so that gas escapes rather than liquid.
- Use water spray to reduce vapors or divert vapor cloud and avoid allowing water runoff to contact spilled material.
- Do not direct water at spill or source of leak.
- Prevent spreading of vapors through sewers, ventilation systems and confined areas.
- Isolate area until gas has dispersed.

SECTION 7: HANDLING & STORAGE

Propane systems must be tested and proven leak-free prior to use. Refer to National Fire Protection Association (NFPA) 54 National Fuel Gas Code for further instructions.

Keep away from all sources of ignition, including heat, sparks and open flames. Never check for leaks with a lit match or flame. Use an approved leak detector solution or electronic leak detector.

All piping and equipment used for the handling, storage and use of propane must be specifically designed for that purpose. Refer to NFPA 54 National Fuel Gas Code and NFPA 58 Liquefied Petroleum Gas Code.

OSHA 29 CFR 1910.110, DOT 49 CFR 172.700 and NFPA 58 all require that persons handling LP gases be specially trained in proper handling and operating procedures, which must be documented by the employer. Only qualified persons should transport, operate, service and/or install propane systems and containers.

Propane vapor is heavier than air and can collect in low-lying areas, especially in the absence of wind or ventilation. Propane is a simple asphyxiant.

Liquid propane can cause freeze burns. Appropriate personal protective equipment should be used whenever handling this product.

Propane cylinders should always be stored in an approved location with relief valves in direct communication with the vapor space, and with service valves closed and plugged when not in use. Refer to NFPA 58 for details of specific storage requirements.

DO NOT STORE PROPANE CYLINDERS OR CONTAINERS INSIDE BUILDINGS. Make sure regulator remains protected so operation will not be affected by the elements (rain, sleet, snow, ice, mud, debris). Regulator vent should be pointed down and checked regularly. Customer to make sure building openings are not created and sources of ignition are not installed within the area of propane tanks, regulators, meters or propane equipment.

Empty propane containers retain residue and should be treated as if full. Never drop or damage containers. Damaged or corroded and leaking containers should not be utilized. Contact your local EDPO LLC supplier immediately to report any problems. If container service valve fails to operate properly, discontinue use. Never insert any object into the pressure relief valve. Return unused propane to supplier for proper disposal.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTIVE EQUIPMENT

| COMPONENT | THRESHOLD LIMIT VALUE (TLV) | PERMISSABLE EXPOSURE LIMIT (PEL) |
|-----------|--------------------------------|-------------------------------------|
| PROPANE | NE | 1000 ppm |
| PROPYLENE | NE | NE |
| BUTANES | NE | 800 ppm |

Engineering Controls: Provide ventilation in enclosed areas where accumulation of vapors may provide a flammable mixture. Where flammable mixtures may be present, specially designed electrical systems must be used in accordance with NFPA 70 National Electric Code.

Respiratory Protection: For general use no protection is required. Under emergency conditions, concentrations may be high enough to warrant supplied-air or self-contained breathing apparatus. Under these conditions, a flammable atmosphere is likely and precautions should be taken to avoid ignition.

Eye Protection: Approved safety glasses, goggles or face shields should be used whenever filling and handling propane containers.

Protective Clothing: To avoid skin contact with liquid propane, approved gloves that are impervious to propane should be worn, along with clothing that will provide protection from liquid propane for the expected duration of exposure.

Other Protective Equipment: Safety shoes are recommended when handling cylinders.

SECTION 9: CHEMICAL & PHYSICAL PROPERTIES

| | | |
|--|----------------------|-------------------------------|
| BOILING POINT: - 44° F | FLASH POINT: -156° F | BULK DENSITY: 4.20 lbs. /gal. |
| SPECIFIC GRAVITY | LIQUID: 0.504 | VAPOR: 1.50 |
| GAS VOLUME @ ATM. PRESSURE & 60° F (Cu. Ft. gas/gal. Liquid): 36.38 | | |
| VAPOR PRESSURE: 208 psig @ 100° F (ASTM) SPECIFIC HEAT of LIQUID: .630 BTU/LB. & 60° F | | |
| FLAMMABILITY LIMITS (% BY VOLUME IN AIR): L.E.L.: 2.1 U.E.L.: 9.5 | | |
| EXPANSION RATIO OF LIQUID TO GAS @ 14.7psia: 1 to 270 | | |
| LIQUID BOIL-OFF TO PROPANE VAPOR ABOVE - 44 F°: 100% | | |

Propane is colorless and odorless.

Propane is very stable.

Polymerization will not occur.

An added odorant gives propane a strong unpleasant smell. Information regarding the effectiveness or intensity of odorants is set forth below.

Propane is Odorized: Propane smells like rotten eggs, a skunk's spray, or a dead animal. Some people may have difficulty smelling propane due to their age (older people have a less sensitive sense of smell); a medical condition; or the effects of medication, alcohol, tobacco or drugs. Consider purchasing a propane gas detector as an additional measure of security.

Odor Fade: Odor fade is an unintended reduction in the concentration of the odor of propane, making it more difficult to smell. Although rare, several situations can cause odor fade:

- > The presence of air, water, or rust in a propane tank or cylinder.
- > The passage of leaking propane through soil.
- > The exposure to building materials, masonry or fabrics.

Since there is a possibility of odor fade or problems with your sense of smell, you should respond immediately to even a faint odor of gas.

To learn what propane smells like, customers unfamiliar with that smell should call your EDPO LLC supplier and order the pamphlets called "Important Propane Safety Information for You and Your Family" and/or an expansive "Propane Safety" booklet to obtain a Scratch and Sniff Test, free of charge. Pamphlets can also be purchased through Propane Education & Research Council (PERC) at 1-866-905-1075 or www.propanecatalog.com.

SECTION 10: STABILITY & REACTIVITY

Chemical Stability - Propane is very stable at normal temperature and storage conditions

Possible Hazardous Reactions - Polymerization reported not to occur

Conditions to Avoid - Keep away from heat, fire, flames, sparks and other sources of ignition

Incompatible Materials - Strong oxidizing agents, acids, bases, ignition sources and heat

Hazardous Decomposition Products - Normal combustion products of propane are carbon dioxide, nitrogen and water vapor. Incomplete combustion of propane can produce carbon monoxide (CO), a toxic gas and various aldehydes; an eye and nose irritant. These can be produced both by gas appliances and internal combustion engines. Propane-fired equipment may emit carbon monoxide in its flue gasses.

SECTION 11: TOXICOLOGICAL INFORMATION

| COMPONENT | THRESHOLD LIMIT VALUE (TLV) | PERMISSABLE EXPOSURE LIMIT (PEL) |
|-----------|--------------------------------|-------------------------------------|
| PROPANE | NE | 1000 ppm |
| PROPYLENE | NE | NE |
| BUTANES | NE | 800 ppm |

Potential Health Effects: Routes of exposure through inhalation and contact with eyes and or skin. Exposure to skin and eyes can result in frostbite – a cold burn. Inhalation hazard related to the asphyxiant properties of propane that can reduce oxygen levels and create suffocation hazard. Ingestion is an unlikely route of exposure.

Propane is not listed in the latest edition of the National Toxicology Program Annual Report on Carcinogens, has not been found to be a potential carcinogen in the latest edition of the International Agency for Research on Cancer Monographs, and has not been identified as a carcinogen by OSHA.

The Food and Drug Administration (FDA) has said propane is generally recognized as safe (GRAS) as a direct human food ingredient when used as a propellant, aerating agent and gas.

SECTION 12: ECOLOGICAL INFORMATION

Upon contact with the environment, propane is expected to volatilize or dissipate.

Upon review of USC Title 15 Chapter 23 Section 2601 commonly known as Toxic Substance Control Act (TSCA), Propane has not been found to be a chemical whose manufacture, processing, distribution in commerce, use or disposal presents an unreasonable risk of injury to health or the environment.

Propane does not contain any Class 1 or Class 2 ozone-depleting chemicals. Propane is not a listed marine pollutant.

SECTION 13: DISPOSAL CONSIDERATIONS

Dispose in accordance with applicable local regulations. Empty propane containers retain residue and should be treated as if full. Follow label warnings even after the container is emptied. Never drop or damage containers. Damaged or corroded and leaking containers should not be utilized. Contact your local EDPO LLC supplier immediately to report any problems. If container service valve fails to operate properly, discontinue use. Never insert any object into the pressure relief valve. Return unused propane to supplier for proper disposal.

SECTION 14: TRANSPORT INFORMATION

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|---------------------------------|-------------------------|
| UN Number: | UN 1075 |
| Proper Shipping Name: | Liquid Petroleum Gas |
| Transport Hazard Class: | 2.1 Flammable Gases |
| Emergency Contact for Shipping: | CHEMTREC (800) 424-9300 |

SECTION 15: REGULATORY INFORMATION

US Federal Regulations:

Occupational Safety & Health Administration (OSHA)

29 CFR 1910.1200 Hazard Communication Standard

29 CFR 1910.110 Storage and Handling of Liquefied Petroleum Gas

29 CFR 1910.119 Process Safety Management of Highly Hazardous Chemicals

Environmental Protection Agency (EPA)

CERCLA Reportable Quantity (RQ): None

Toxic Substance Control Act (TSCA)

Propane is listed on the TSCA inventory

California Proposition 65

This material does not contain any chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm at concentrations that trigger the warning requirements of California Proposition 65.

Warning: Chemicals known to the state of California to cause cancer, birth defects or other reproductive harm are created by the combustion of propane.

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| SECTION 16: OTHER INFORMATION |
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This Safety Data Sheet, issued August 2015

For further information write to:

EDPO LLC
Attention: Director of Safety
Suite 200 West Madison Street, P. O. Box 980
Chicago, Ill. 60606

FURTHER DISCLAIMER: The information contained in this document is believed to be correct at the time of writing. NO WARRANTY OF MERCHANTABILITY, SUITABILITY FOR ANY SPECIFIC PURPOSE, OR ANY ASPECT REGARDING ITS INTENDED USE OR THE EXPECTED RESULTS TO BE OBTAINED IS EXPRESSED OR IMPLIED. This information and the propane furnished is done so on condition that the person(s) receiving them shall make their own determination as to the suitability of the propane for any specific purpose, and that they assume any and all risks associated with its storage and use.

CONSUMER SAFETY INFORMATION

Consumer Safety Information prepared by the Propane Education & Research Council (PERC). Pamphlets called "Important Propane Safety information for You and Your Family," "Important Propane Safety Information for Users of Small Cylinders" (including cylinder transportation, storage and inspection procedures), an expansive "Propane Safety" booklet, weather/natural disaster information and EDPO LLC Safety Data Sheet (SDS) may be read and downloaded online. These documents are available through PERC pamphlets containing a Scratch and Sniff Test of propane odor which can be purchased at 1-866-905-1075 or www.propanecatalog.com.