

SAFETY DATA SHEET

EFFECTIVE August 2015



SECTION 1 – PRODUCT & COMPANY IDENTIFICATION

Product Name: Commercial Odorized Propane
Chemical Name: **Propane** (C₃H₈)
Chemical Family: Petroleum Hydrocarbon
Common Names: Liquefied Petroleum Gas, LP-Gas, LPG, Bottle Gas
Intended Use: Propane is a liquid fuel
Distributor: Harper Industries, Inc. 645 SW Cherry Lane, Jesup, GA 31545
Emergency Response: CHEMTREC (800) 424-9300

SECTION 2 – CHEMICAL HAZARD CLASSIFICATION & WARNING INFORMATION

NFPA CLASSES:

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



Physical hazards

Flammable gases

Category 1

Health hazards

Gases under pressure

Liquefied gas

Acute toxicity, inhalation

Category 4

Germ cell mutagenicity

Category 1B

Carcinogenicity

Category 1A

Reproductive toxicity

Category 1A

Specific target organ toxicity, repeated exposure

Category 2

OSHA defined hazards

Not classified.

Label Elements



Signal Word

Danger

Hazard Statement	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. Extremely flammable gas. Harmful if inhaled. May cause genetic defects. May cause cancer. May damage fertility or the unborn child. May cause damage to Blood through prolonged or repeated exposure. May cause cryogenic burns or injury. Propane is a simple asphyxiant.
Precautionary statement	
General	Read and follow all Safety Data Sheets (SDS'S) before use. Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand.
Prevention	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Wear cold insulating gloves/face shield/eye protection. Do not breathe gas. Avoid breathing vapors. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection.
Response	If inhaled: Remove person to fresh air and keep comfortable for breathing. Get immediate medical advice/attention. Leaking gas fire: Do not extinguish, unless leak can be stopped safely. Eliminate all ignition sources if safe to do so. In case of contact with liquefied gas, thaw frosted parts with lukewarm water.
Storage	Store in a well-ventilated place.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	Contact with liquefied gas can cause damage (frostbite) due to rapid evaporative cooling. Keep away from heat, sparks, open flames and hot surfaces. No smoking. Use and store only outdoors or in a well-ventilated places.

SECTION 3 – COMPOSITION/INGREDIENT INFORMATION

COMPONENTS	CAS NO.	CONCENTRATION
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

Inhalation	Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory tract irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation. If breathing is difficult, give oxygen. If breathing or heartbeat cease, artificial respiration or cardiopulmonary resuscitation should be started immediately. Get medical attention.
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

Eye Contact

due to freezing. Affected body parts should be gently flushed with or immersed in lukewarm water for 15 minutes. Seek medical attention.

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.

Ingestion

Deemed unlikely. Contact with liquid form may cause frostbite. Get medical attention immediately.

Most important symptoms/effects, acute, and delayed

Frostbite, burns. Due to oxygen deficiency inhalation of gas may cause dizziness, light-headedness, headache, nausea and loss of coordination. Continued inhalation may result in unconsciousness.

Indication of immediate medical attention and special treatment needed

In case of shortness of breath, give oxygen. Provide general supportive measures and treat symptomatically.

General information

Ensure that medical personnel are aware of the materials(s) involved, and take precautions to protect themselves.

SECTION 5 – FIRE FIGHTING MEASURES

Suitable 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.

Unsuitable extinguishing media

Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical

During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters

Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire fighting equipment/instructions

In case of fire and/or explosion do not breathe fumes. DO NOT EXTINGUISH A LEAKING GAS FIRE UNLESS LEAK CAN BE STOPPED. ALWAYS stay away from tanks engulfed in flame. Move containers from fire area if you can do so without risk. Do not direct water at source of leak or safety devices as icing may occur. Use water spray to cool unopened containers. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. For massive fire in cargo area, use unmanned hose holder or monitor nozzles, if possible. If not, withdraw and let fire burn out.

Clear and evacuate the area - only properly trained and protected emergency response personnel shall be permitted in the area.

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 source 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

Specific methods

Use standard firefighting procedures and consider the hazards of other involved materials. Cool containers exposed to flames with water until well after the fire is out.

General fire hazards

PROPANE IS EXTREMELY FLAMMABLE. Propane will be easily ignited by heat, sparks, or flame. Propane will form explosive mixtures with air. 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.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Personal precautions, Protective equipment, and emergency procedures

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 Suburban Propane supplier. Never enter a vapor (white) cloud.

Methods and materials For containment and cleaning up

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

Environmental

Prevent further leakage or spillage if safe to do so. Avoid discharge into **precautions** drains, water courses or onto the ground.

SECTION 7 – HANDLING & STORAGE

Precautions for safe handling

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, and appropriate personal protective equipment should be used whenever handling this product.

Conditions for safe storage, including any incompatibilities

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 be 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 Suburban Propane 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.

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.

SECTION 8 – EXPOSURE CONTROLS/PERSONAL PROTECTIVE EQUIPMENT

Component	Threshold Limit Value (TLV)	Permissible Exposure Limit (PEL)
Propane	NE	1000ppm
Propylene	NE	NE
Butanes	NE	800ppm

Appropriate 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.

Individual protection measures, such as personal protective equipment

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.

General hygiene considerations

When using do not smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

SECTION 9 – CHEMICAL & PHYSICAL PROPERTIES

Appearance	
Physical State	Gas
Form	Liquefied gas
Color	Colorless
Odor	Odorless (Unless Odorized – See Below)
Odor threshold	5000-20000ppm
pH	NA
Melting point/freezing point	-309.46 °F (-189.7 °C)
Initial boiling point and boiling range	-44 °F (-42.22 °C)
Flash Point	-156.0 °F (-104.4 °C)
Evaporation rate	Not available.
Flammability (solid,gas)	Flammable gas.
Upper/lower flammability or explosive limits	
Flammability limit-lower(%)	2.2 %
Flammability limit-upper(%)	9.5 %
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.

Vapor pressure	Not available.
Vapor density	Not available.
Relative density	0.58
Solubility(ies)	
Solubility (water)	Negligible
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	842 °F (450 °C)
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Percent volatile	100%
Specific Gravity(Liquid)	0.504
Specific Gravity(Vapor)	1.50
Expansion ratio of liquid to gas @ 14.7psia	1 to 270

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 be given a pamphlet called "Important Propane Safety Information for You and Your Family" and/or an expansive "Propane Safety" booklet to obtain a Scratch and Sniff Test. These are available from Harper Industries, Inc. free of charge by calling 800-342-7330. Pamphlets can also be purchased through Propane Education & Research Council (PERC) at 1-866-905-1075 or www.propanecatalog.com.

SECTION 10 – STABILITY & REACTIVITY

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
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

Information on likely routes of exposure

Inhalation

Skin contact

Eye contact

Ingestion

Symptoms related to the physical, chemical and toxicological characteristics

Harmful if inhaled. May cause damage to organs through prolonged or repeated exposure by inhalation.

Contact with liquefied gas may cause frostbite.

Contact with liquefied gas may cause frostbite.

Expected to be a low ingestion hazard.

Frostbite, burns. Due to oxygen deficiency inhalation of gas may cause dizziness, light-headedness, headache, nausea and loss of coordination. Continued inhalation may result in unconsciousness.

Information on toxicological effects

Acute toxicity

Skin corrosion/irritation

Serious eye damage/eye irritation

Respiratory or skin sensitization

Respiratory sensitization

Skin sensitization

Germ cell mutagenicity

Carcinogenicity

OSHA Specifically Regulated Substances

(29 CFR 1910.1001-1050)

Reproductive toxicity

Specific target organ toxicity single exposure

Specific target organ toxicity repeated exposure

Aspiration hazard

Chronic effects

Harmful if inhaled.

Contact with liquefied gas may cause frostbite.

Contact with liquefied gas may cause frostbite.

Not a respiratory sensitizer.

This product is not expected to cause skin sensitization.

May cause genetic defects.

May cause cancer.

Not listed.

May damage fertility or the unborn child.

Not classified.

May cause damage to organs through prolonged or repeated exposure.

Not likely, due to the form of the product.

May cause damage to organs through prolonged or repeated exposure. Prolonged inhalation may be harmful.

SECTION 12 – ECOLOGICAL INFORMATION

Ecotoxicity

The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Persistence and degradability

No data is available on the degradability of this product.

Bioaccumulative potential

Mobility in soil

Other adverse effects

No data available.

No data available.

No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

SECTION 13 – DISPOSAL CONSIDERATIONS

Disposal instructions

Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations

Dispose in accordance with all applicable regulations.

Hazardous waste code

The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products

Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging

Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

SECTION 14 – TRANSPORT INFORMATION

DOT

UN number	UN1075
UN proper shipping name	Liquefied petroleum gas
Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
Label(s)	2.1
Packing group	Not applicable.
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	T50
Packaging exceptions	306
Packaging non bulk	304
Packaging bulk	314, 315

IATA

UN number	UN1075
UN proper shipping name	Liquefied petroleum gas
Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
Label(s)	2.1
Packing group	Not applicable.
Environmental hazards	No.
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number	UN1075
UN proper shipping name	LIQUEFIED PETROLEUM GAS
Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
Label(s)	2.1
Packing group	Not Applicable.
Environmental hazards	
Marine Pollutant	No.
EmS	Not available.
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Transport in bulk according to Annex II of MARPOL 73/78 and IBC Code	Not applicable.

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)

CLA 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.

SECTION 16 – OTHER INFORMATION

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 ARE 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 product for any specific purpose, and that they assume any and all risks associated with that use.

CONSUMER SAFETY INFORMATION

We urge you to utilize 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), and expansive “Propane Safety” booklet, weather/natural disaster information, PERC pamphlets containing a Scratch and Sniff Test of propane odor, and the Safety Data Sheet (SDS) may be obtained from Harper Industries free of charge by calling (800) 342-7330.