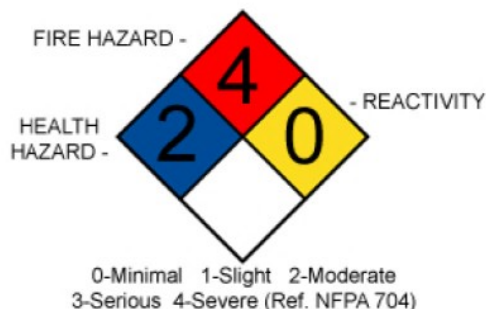


SAFETY DATA SHEET ODORIZED PROPANE



Mutual Liquid Gas & Equipment Co., Inc.
17117 South Broadway Street
Gardena, California 90248



SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Propane - Commercial Grade

Synonyms : Propane, Liquefied Petroleum Gas, LP Gas, HD-5 Propane, HD-10 Propane

SDS Number : 888100004785 **Version** : 2.14

Product Use Description : Fuel gas, Liquefied Petroleum Gas (LPG)

Company : For: Mutual Liquid Gas & Equipment Co.

Technical Information : (310) 515-0553 **Chemtrec:** (800) 424-9300
(Emergency Contact) (800) 633-8253

SECTION 2. HAZARDS IDENTIFICATION

Classifications: : Flammable Gas – Category 1
Gases Under Pressure – Liquefied Gas
Specific Target Organ Toxicity (Single Exposure) – Category 3

Pictograms:



Signal Word: Danger

Hazard Statements: Extremely flammable gas.
Contains gas under pressure; may explode if heated.
May cause drowsiness and dizziness..

Precautionary Statements

Prevention: Keep away from heat/sparks/open flame/hot surfaces. No smoking.
Avoid breathing gas. Use only outdoors or in a well ventilated area.

Response: Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
Eliminate all ignition sources if safe to do so. If inhaled: Remove person to fresh air and keep comfortable for breathing.
Call a doctor or an emergency medical service provider if you feel unwell.

Storage: Store in well ventilated place. Protect from sunlight.
Keep container tightly closed. Store locked up.

Disposal: Dispose of contents/container in accordance with local/ regional/ national/ international regulations.

Supplemental Hazard Information: The intensity of the chemical odorant (e.g., ethyl mercaptan) may “fade” or diminish due to chemical oxidation, adsorption or absorption. Individuals with nasal perception problems may not be able to smell the odorant. Leaking propane from underground gas lines may lose its odor as it passes through certain soils. No odorant is effective 100% of the time. Therefore, circumstances can exist when individuals are in the presence of leaking propane and not be alerted by the smell. Contact Mutual Propane for more information about odor, propane gas detectors and other safety considerations associated with the handling, storage and use of propane.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No.	Weight %
Propane	74-98-6	85 - 100%
Propene; Propylene	115-07-1	0 - 10%
Isobutane	75-28-5	0 - 7%
Ethane	74-84-0	0 - 7%
Butane	106-97-8	0 - 5%
Ethanethiol; Ethyl mercaptan	75-08-1	0 < 0.1%

SECTION 4. FIRST AID MEASURES

Inhalation	: Remove to fresh air. If not breathing, give artificial respiration. If necessary, provide additional oxygen once breathing is restored if trained to do so. Seek medical attention immediately.
Skin contact	: Take off contaminated clothing and shoes immediately. Wash off immediately with soap and plenty of water. Seek medical advice if symptoms persist or develop.
Eye contact	: In case of eye contact, immediately flush with low pressure, cool water for at least 15 minutes, opening eyelids to ensure flushing. Seek medical attention.
Ingestion	: Ingestion is considered unlikely. If accidentally swallowed obtain immediate medical attention.
Notes to physician	: Symptoms: Dizziness, Headache, Nausea, Frostbite, Vomiting, Discomfort

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	: Water spray, Dry chemical, Foam, Carbon dioxide (CO ₂), Fire should not be extinguished unless flow of gas can be immediately stopped.
Specific hazards during fire fighting	: Liquid releases flammable vapors at well below ambient temperatures and readily forms a flammable mixture with air. Dangerous fire and explosion hazard when exposed to heat, sparks or flame. Vapors are heavier than air and may travel long distances to a point of ignition and flash back. Container may explode in heat or fire. Do not allow liquid runoff to enter sewers or public waters.
Special protective equipment	: Firefighting activities that may result in potential exposure to high heat, smoke or

for fire-fighters	toxic by-products of combustion should require NIOSH/MSHA- approved pressure-demand self-contained breathing apparatus with full facepiece and full protective clothing.
Further information	: Keep people away from and upwind of spill/leak. Fire should not be extinguished unless flow of gas can be immediately stopped. If spill or leak has not ignited, determine if water spray may assist in dispersing gas or vapor to protect personnel attempting to stop leak. Use water to cool equipment, surfaces and containers exposed to fire and excessive heat. For large fire the use of unmanned hose holders or monitor nozzles may be advantageous to further minimize personnel exposure. Isolate area, particularly around ends of storage vessels. Withdraw immediately in the event of a rising sound from a venting safety device. Large fires typically require specially trained personnel and equipment to isolate and extinguish the fire.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions	: Evacuate nonessential personnel and remove or secure all ignition sources. No road flares, smoking or flames in hazard area. Consider wind direction; stay upwind and uphill, if possible. Evaluate the direction of product travel, diking, sewers, etc. to contain spill areas. Vapor cloud may be white, but color will dissipate as cloud disperses - fire explosion may be present after visible cloud is dispersed. Ventilate and gas test area before entering. Do not touch spilled liquid (frostbite/freeze burn hazard!).
Environmental precautions	: Carefully contain and stop the source of the spill, if safe to do so. Do not flush down sewer or drainage systems, unless system is designed and permitted to handle such material.
Methods for cleaning up	: The product evaporates readily. Consider the use of water spray to disperse gas or vapors. Isolate area until gas has dispersed.

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling	: See also applicable OSHA regulations for the handling and storage of this product, including, but not limited to, 29 CFR 1910.110 Storage and Handling of Liquefied Petroleum Gases.
	: Keep away from open flames, hot surfaces and sources of ignition. Use only in well-ventilated areas. Store in a well-ventilated area and in accordance with NFPA 58 "Liquefied Petroleum Gas Code".
Conditions for safe storage, including incompatibilities	: Store only in approved containers. Keep away from flame, sparks, excessive temperatures and open flame. Keep containers closed and clearly labeled. Empty product containers or vessels may contain explosive vapors. Do not pressurize, cut, heat, weld or expose containers to sources of ignition.
	: Keep away from oxidizing agents and strongly acid or alkaline materials. Keep away from food, drink and animal feed.
	: Keep in a dry place. Keep away from heat. No decomposition if stored and applied as directed.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines

List	Components	CAS-No.	Type:	Value
OSHA Z1	Propane	74-98-6	PEL	1,000 ppm 1,800 mg/m3
	Ethanethiol; Ethyl mercaptan	75-08-1	Ceiling	10 ppm 25 mg/m3
ACGIH	Propane	74-98-6	TWA	1,000 ppm
	Propene; Propylene	115-07-1	TWA	500 ppm
	Isobutane	75-28-5	TWA	1,000 ppm
	Ethane	74-84-0	TWA	1,000 ppm
	Butane	106-97-8	TWA	1,000 ppm
	Ethanethiol; Ethyl mercaptan	75-08-1	TWA	0.5 ppm

Engineering measures	: Use adequate ventilation to keep gas and vapor concentrations of this product below occupational exposure and flammability limits, particularly in confined spaces. Use explosion-proof equipment and lighting in classified/controlled areas.
Eye protection	: Where there is a possibility of liquid contact, wear splash-proof safety goggles and faceshield. Ensure that eyewash stations and safety showers are close to the workstation location.
Hand protection	: Where contact with liquid may occur, wear cold-impervious, insulating gloves.
Skin and body protection	: Where contact with liquid may occur, wear apron and faceshield. Flame resistant clothing such as Nomex ® is recommended in areas where material is stored or handled.
Respiratory protection	: Use a NIOSH/ MSHA-approved positive-pressure supplied-air respirator if there is a potential for uncontrolled release, exposure levels are not known, in oxygen-deficient atmospheres, or any other circumstance where an air-purifying respirator may not provide adequate protection. Refer to OSHA 29 CFR 1910.134, ANSI Z88.2-1992, NIOSH Respirator Decision Logic, and the manufacturer for additional guidance on respiratory protection selection.
Hygiene measures	: Handle in accordance with good industrial hygiene and safety practice, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: Colorless gas. Cold vapor cloud may be white but the lack of visible gas cloud does not indicate absence of gas. A colorless liquid when pressurized.
Odor	: Odorant is added to aid in the detection of leaks. One common odorant is ethyl mercaptan, CAS No. 75-08-1. Odorant has a foul smell.
Odor threshold	: Odor threshold for mercaptan additive is in the 40 part per billion range.
pH	: Not applicable
Melting point/freezing point	: -189.7°C (-309.4°F)
Initial boiling point & range	: -42°C (43.6°F) at 1,013.25 hPa

Flash point:	-104°C (-155.2°F) Method: ASTM D 92
Evaporation rate:	High
Flammability (solid, gas):	Gas
Lower flammability limit:	2.1 % (V)
Upper flammability limit:	9.5 % (V)
Vapor pressure:	8,400 hPa at 20°C (68°F)
Vapor density:	1.6 at 21.1°C (70.0°F) (Air = 1.0)
Relative density:	0.5 at 15 °C (59°F) (Water = 1.0)
Solubility (H2O):	Negligible
Partition coefficient (Octanol/H2O):	2.36 log Pow
Auto ignition temperature:	450°C (842°F)
Decomposition temperature:	Heating may cause a fire or explosion. Material does not decompose at ambient temperatures. Carbon monoxide, carbon dioxide and non-combusted hydrocarbons (smoke) are possible hazardous decomposition products.
Viscosity:	No data available
Conductivity:	Hydrocarbon liquids without static dissipater additive may have conductivity below 1 picoSiemens per meter (pS/m). The highest electro-static ignition risks are associated with "ultra-low conductivities" below 5 pS/m. See Section 7 for sources of information on defining safe loading and handling procedures for low conductivity products. Note that conductivity can be reduced by environmental factors such as a decrease in temperature.

SECTION 10. STABILITY AND REACTIVITY

Reactivity	: Vapors may form explosive mixture with air. Hazardous polymerization does not occur.
Chemical Stability	: Stable under normal conditions.
Hazardous reactions	: Can react with strong acids, strong oxidizers, and copper. Explosion hazard when exposed to nickel carbonyl/oxygen mixture.
Conditions to avoid	: Keep away from flame, sparks, excessive temperatures and open flame.
Incompatible materials	: Can react with strong acids, strong oxidizers, and copper
Hazardous decomposition products	: Carbon monoxide, carbon dioxide and non-combusted hydrocarbons (smoke) are Possible hazardous decomposition products..

SECTION 11. TOXICOLOGICAL INFORMATION

Inhalation	: May cause central nervous system disorder (e.g. narcosis involving a loss of coordination, weakness, fatigue, mental confusion and blurred vision) and/or damage. Simple asphyxiant: Acts by displacing oxygen in the lungs thereby diminishing the supply of oxygen available to the blood and tissues. Symptoms include shortness of breath, rapid heart rate, incoordination, lethargy, headaches, nausea, vomiting, and disorientation. Continued lack of oxygen may result in
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convulsions, loss of consciousness and death. Since exercise increases the tissue need for oxygen, symptoms will occur more quickly during exertion in an oxygen-deficient environment. Oxygen in enclosed spaces should be maintained at 21 percent by volume.

Skin irritation

: Direct contact to skin or mucous membranes with liquefied product or cold vapor may cause freeze burns and frostbite.

Eye irritation

: Direct contact to skin or mucous membranes with liquefied product or cold vapor may cause freeze burns and frostbite.

Further information

: Concentrations above the permissible exposure limit may cause dizziness, headache and inebriation.
Propane exhibits some degree of anesthetic action and is mildly irritating to the mucous membranes.
At high concentrations propane acts as a simple asphyxiant without other significant physiological effects.

Component:**Propane**

74-98-6 Skin irritation: Classification: Irritating to skin.Result: Skin irritation
Eye irritation: Classification: Irritating to eyes.Result: Mild eye irritation

Propene; Propylene

115-07-1 Acute inhalation toxicity: LC50 ratDose: 658 mg/l
Exposure time: 4 h
Eye irritation: Classification: Irritating to eyes.Result: Mild eye irritation

Ethane

74-84-0 Skin irritation: Classification: Irritating to skin.Result: Skin irritation
Eye irritation: Classification: Irritating to eyes.Result: Eye irritation

Ethanethiol; Ethyl mercaptan

75-08-1 Acute oral toxicity: LD50 ratDose: 682 mg/kg
Acute inhalation toxicity: LC50 ratDose: 11.4 mg/l
Exposure time: 4 h
Skin irritation: Classification: Irritating to skin.Result: Mild skin irritation
Eye irritation: rabbitClassification: Irritating to eyes.
Result: Mild eye irritation

NTP

No component of this product which is present at levels greater than or equal to 0.1 % is identified as a known or anticipated carcinogen by NTP.

IARC

No component of this product which is present at levels greater than or equal to 0.1 % is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA

No component of this product which is present at levels greater than or equal to 0.1 % is identified as a carcinogen or potential carcinogen by OSHA.

CA Prop 65

This product does not contain any chemicals known to State of California to cause cancer, birth, or any other reproductive defects.

SECTION 12. ECOLOGICAL INFORMATION**Additional ecological information**

: Liquid release is only expected to cause localized, non-persistent environmental damage, such as freezing. Biodegradation of this product may occur in soil and water. Volatilization is expected to be the most important removal process in soil and water. This product is expected to exist entirely in the vapor phase in ambient air.

Component:**Ethanethiol; Ethyl mercaptan**

75-08-1 Acute and prolonged toxicity for aquatic invertebrates:
EC50
Species: Daphnia magna (Water flea)

Dose: 0.38 mg/l
Exposure time: 24 h

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal : Consult federal, state and local waste regulations to determine appropriate waste characterization of material and allowable disposal methods.

SECTION 14. TRANSPORT INFORMATION

DOT Shipping name : Liquefied Petroleum Gas

Identification number : UN 1075

IMO Identification number : UN 1978

IMO Shipping name : Propane

Shipping label (s) : Flammable Gas

Placard (When required) : Flammable Gas

Hazard Class : 2.1 (Flammable Gas)

Product RQ : None

Special shipping information : Container must be transported in a well-ventilated vehicle, secured, and in a position such that the pressure relief device is in communication with the vapor space.

SECTION 15. REGULATORY INFORMATION

TSCA Status : On TSCA Inventory

DSL Status : All components of this product are on the Canadian DSL list.

SARA 311/312 Hazards : Fire Hazard
Sudden Release of Pressure Hazard
Acute Health Hazard

CERCLA SECTION 103 and SARA SECTION 304 (RELEASE TO THE ENVIRONMENT)

The CERCLA definition of hazardous substances contains a "petroleum exclusion" clause which exempts crude oil. Fractions of crude oil, and products (both finished and intermediate) from the crude oil refining process and any indigenous components of such from the CERCLA Section 103 reporting requirements. However, other federal reporting requirements, including SARA Section 304, as well as the Clean Water Act may still apply.

SARA III US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 313 Toxic Chemicals (40 CFR 372.65) - Supplier Notification Required

<u>Components</u>	<u>CAS-No.</u>
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Propene; Propylene	115-07-1
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PENN RTK US. Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323)

<u>Components</u>	<u>CAS-No.</u>
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Propene; Propylene	115-07-1
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Isobutane	75-28-5
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Ethane	74-84-0
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Butane	106-97-8
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Propane	74-98-6
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MASS RTK US. Massachusetts Commonwealth's Right-to-Know Law (Appendix A to 105 Code of Massachusetts Regulations Section 670.000)

<u>Components</u>	<u>CAS-No.</u>
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Propane	74-98-6
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Butane	106-97-8
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Isobutane	75-28-5
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Propene; Propylene	115-07-1
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NJ RTK US. New Jersey Worker and Community Right-to-Know Act (New Jersey Statute Annotated Section 34:5A-5)

<u>Components</u>	<u>CAS-No.</u>
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Propene; Propylene	115-07-1
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Isobutane	75-28-5
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Ethane	74-84-0
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Butane	106-97-8
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Propane	74-98-6
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California Prop 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.

California requires all "persons in the course of doing business" whose products are sold in California to comply with Proposition 65 (Cal. Health and Safety Code Sections 25249.6, et seq.). Accordingly, resellers of this product in California shall comply with Proposition 65, including the provision of any necessary warnings for exposure to chemicals listed by the State of California:

http://oehha.ca.gov/prop65/prop65_list/files/P65single111811.pdf.

SECTION 16. OTHER INFORMATION

Special Precautions:

Use piping and equipment adequately designed to withstand pressure to be encountered. NFPA 58, LP-GAS CODE and OSHA 29 CFR 1910.10 require that all persons employed in handling LP-gases be trained in proper handling and operating procedures, which the employer shall document. Contact your propane supplier or Mutual Propane to arrange for the required training. Allow only trained and qualified persons to install and service propane containers and systems.

Further information

This material safety data sheet and the information it contains is offered to you in good faith as accurate. This Supplier does not manufacture this product, but is a supplier of the product that is independently produced by others. Much of the information contained in this data sheet was received from sources outside our Company. To the best of our knowledge this information is accurate, but this Supplier does not guarantee its accuracy or completeness. Health and safety precautions in this data sheet may not be adequate for all individuals and/or situations. It is the user's obligation to evaluate and use this product safely, comply with all applicable laws and regulations and to assume the risks involved in the use of this product.

Revision Date : 12/26/2013