Safety Data Sheet – Odorized Propane

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Odorized Commercial Propane
Chemical Name: Propane
Chemical Family: Hydrocarbon
Formula: C3H8
Synonyms: Dimethylmethane, LP-Gas, Liquefied Petroleum Gas (LPG), Propane, Propyl Hydride

Supplier:
Fencl Oil & L.P. Co., Inc.
138 Main Street
PO Box 225
Protivin, IA 52163
800-668-3253

24 Hour Emergency Response Number:
INFOTRAC 1-800-535-5053 or 1-352-323-3500

2. COMPOSITION / INFORMATION ON INGREDIENTS

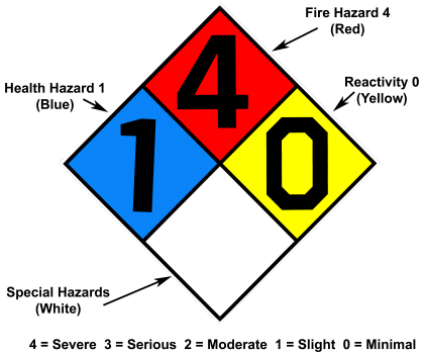
Ingredient Name / CAS Number	Percentage	OSHA PEL
Propane / 74-98-6	87.5-100	1000 ppm
Ethane / 74-84-0	0-7.5	1000 ppm
Propylene / 115-07-1	0-10.0	1000 ppm
Butanes/various	0-2.5	1000 ppm
Ethyl Mercaptan / 75-08-1	16-25 ppm	0.5 ppm

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

DANGER EXTREMELY FLAMMABLE Will be easily ignited by heat, sparks or flames. Will form explosive mixtures with air. Vapors from liquefied gas are initially heavier than air and spread along ground. Vapors may travel to source of ignition and flash back. Vapors may cause dizziness or asphyxiation without warning. Some may be irritating if inhaled at high concentrations. Contact with gas or liquefied gas may cause burns, severe injury and/or frostbite. Fire may produce irritating and/or toxic gases. High fire hazard. Keep away from heat, spark, open flame, and other ignition sources.

NFPA 704 Hazard Identification System



POTENTIAL HEALTH EFFECTS
ROUTE(S) OF ENTRY
Eyes: Yes Skin: Yes Inhalation: Yes Ingestion: No

EYES
MODERATE TO SEVERE IRRITANT. Contact with liquid will cause cryogenic (freezer) burns or frostbite.
Vapors may cause irritation to the eyes, conjunctiva, and mucous membranes, causing redness and tearing.

SKIN
SLIGHT TO MODERATE IRRITANT. Direct contact with the liquefied product causes burns & frostbite. Inhalation, skin and eye contact by liquid. Contact with liquid will cause cryogenic (freezer) burns or frostbite. High pressure skin injections are serious medical emergencies. The appearance of injury may be delayed for a few hours, but may cause tissue to become swollen, discolored and extremely painful; permanent damage or death may result without adequate medical treatment.

INGESTION
Propane is extremely unlikely to be swallowed and much more likely to be inhaled. If propane is swallowed severe burns will occur wherever propane contacts any tissues.

INHALATION
Vapors may cause nose and throat irritation, anesthetic effects and central nervous system (CNS) depression. Inhalation may result in dizziness, drowsiness, and headaches. An increased pulse rate may occur. Hyperventilation may develop: headache, dizziness, mood disturbances, numbness of the extremities, sleepiness, mental confusion, poor judgment and coordination, and memory loss may occur.

WARNING: The burning of any hydrocarbon as a fuel in an area without adequate ventilation may result in hazardous levels of combustion products, including carbon monoxide, and inadequate oxygen levels, which may cause unconsciousness, suffocation, and death.

CHRONIC EFFECTS/CARCINOGENICITY
n-Butane has been reported to cause some symptoms in the central nervous system. Not known to contain carcinogens.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE
Irritation from skin exposure may aggravate existing open wounds, skin disorders, and dermatitis (rash) conditions. Chronic respiratory disease, liver or kidney dysfunction, or pre-existing central nervous system disorders may be aggravated by exposure.

4. FRIST AID MEASURES

EYES
In case of contact with eyes, immediately flush with clean, low-pressure water for at least 15 min. Hold eyelids open to ensure adequate flushing. Seek medical attention.

SKIN
This material will cause cryogenic (freezer) burns if clothing is frozen treat by immersing in lukewarm water for 30 minutes. Remove clothing unless stuck to a burn area in which case cut around the burn leaving cloth fixed to the burn. Obtain medical attention immediately.

INGESTION
This product is unlikely to be ingested and more likely to be inhaled. DO NOT INDUCE VOMITING BECAUSE OF DANGER OF BREATHING LIQUID INTO LUNGS. Seek immediate medical attention. Rinse mouth with water. Administer 1 to 2 glasses of water or milk to drink. Never administer liquids to an unconscious person. If spontaneous vomiting occurs, lean victim forward to reduce the risk of aspiration. Seek medical attention. Monitor for breathing difficulty.

INHALATION
Remove person to fresh air. If person is not breathing, ensure an open airway and administer CPR. If necessary, provide additional air or oxygen once breathing is restored if trained to do so. Seek medical attention immediately.

5. FIRE-FIGHTING MEASURES

FLASH POINT: -1560F (-1040C)
AUTOIGNITION: 8420F (4320C)
IGNITION TEMPERATURE IN AIR: 920-11200F
FLAMMABLE LIMITS IN AIR BY VOLUME: Lower: 2.15% Upper: 9.6%

EXTINGUISHING MEDIA: Dry chemical, CO2, water spray or fog for surrounding area. Do not extinguish fire until propane source is shut off.

SPECIAL FIRE-FIGHTING INSTRUCTIONS: Evacuate personnel from danger area. Evacuated personnel should stay up wind, and away from tank ends, and move to a distance at least 1mile or more away from containers subject to direct flame. Immediately cool container(s) (especially upper half) with water spray from maximum distance and the sides of containers, taking care not to extinguish flames. If flames are extinguished, explosive re-ignition may occur. Stop flow of gas, if possible without risk, while continuing cooling water spray.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Propane is easily ignited. It is heavier than air; therefore, it can collect in low areas while dissipating. Vapors may be moved by wind or water spray. Vapors may move to areas where ignition sources are present, and ignite, flashing back to the source. Pressure in a container can build up due to heat and container may rupture if pressure relief devices should fail to function.

6. ACCIDENTAL RELEASE MEASURES

ACTIVATE YOUR FACILITY'S SITE SPECIFIC EMERGENCY RESPONSE PLAN if available.

ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Evacuate nonessential personnel. Consider wind direction; stay upwind and uphill, if possible. Evaluate the direction of product travel, diking, sewers, etc. to confirm spill areas. See Section 8 for personal protection. All equipment used when handling the product must be grounded. Do not touch or walk through spilled material. Stop leak if you can do it without risk. If possible, turn leaking containers so that gas escapes rather than liquid. Use water spray to reduce vapors or divert vapor cloud drift. 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. CAUTION: When in contact with refrigerated/cryogenic liquids, many materials become brittle and are likely to break without warning.

Carefully contain and stop the source of the spill, if safe to do so.

SMALL SPILLS: Prevent additional leaking of material if safe to do so. Remove or shut off.

LARGE SPILLS: CALL Emergency Response Telephone Number. Isolate spill or leak area immediately for at least 50 to 100 meters (160 to 330 feet) in all directions. Keep unauthorized personnel away. Stay upwind. Many gases are heavier than air and will spread along ground and collect in low or confined areas (sewers, basements, tanks). Keep out of low areas. The proper use of water spray may effectively disperse product vapors, preventing contact with ignition sources or areas /equipment that require protection. Do not discharge solid water stream pattern into the liquid resulting in splashing. Do not flush down sewer or drainage systems. Protect bodies of water by diking, if possible. Evacuation: Fire: If tank, rail car or tank truck is involved in a fire, ISOLATE for l600 meters (1 mile) in all directions; also, consider initial evacuation for 1600 meters (1 mile) in all directions.

Caution: the application of water and/or fire fighting foam may cause the spilled liquid to liberate increased amounts of vapors, particularly when the water/foam temperature is warmer than the liquid. However, this effect may be desirable under certain conditions to evaporate a spill quickly.

Consideration should be given to environmental clean-up and waste material generation when determining if the use of large volumes of water is appropriate for non-fire emergency situations. Clean-up crews must be properly trained and must utilize proper protective equipment.

7. HANDLING AND STORATE

HANDLING PRECAUTIONS
Handle as a flammable gas. Keep away from heat, sparks, and open flame. No smoking or open flame in storage, use of handling areas. Keep containers closed and clearly labeled. Ground all containers and transfer vessels when handling. Empty product containers or vessels may contain explosive vapors. Do not pressurize, cut, heat, weld or expose such containers to sources of ignition. Use only with adequate ventilation. Avoid breathing vapors. Do not use as a cleaning agent. Wash thoroughly after handling. Electrical equipment should be approved for classified area. Emergency eye wash capability should be available in the vicinity of any potential splash exposure.

STORAGE PRECAUTIONS
Store in a well ventilated area. This storage area should comply with NFPA 30 ("Flammable and Combustible Liquid Code"). Avoid storage near incompatible materials.

The cleaning of tanks previously containing this product should follow API Recommended Practice (RP) 2013 "Cleaning Mobile Tanks In Flammable and Combustible Liquid Service" and API RP 2015 "Cleaning Petroleum Storage Tanks".

NATURALLY OCCURRING RADIOACTIVE MATERIAL (NORM):
Industry experience indicates that propane contains small amounts of a radioactive gas called radon; radon decays into other radioactive products (called radon daughters). These naturally occurring radioactive materials (called NORM) can accumulate in production and process equipment handling propane liquids. Scales, deposits, and sludges from this equipment may have a significant accumulation of NORM. Gamma radiation above background may be detected external to equipment contaminated with NORM; such equipment should be assumed to be internally contaminated with long half-life decay products that emit alpha radiation, which is a radiation hazard if inhaled. Steps should be taken to minimize skin and inhalation exposure to NORM dusts/mists by wearing personal protective clothing [such as disposable Tyvek (®DuPont)], utilizing respiratory protection (minimum of HEPA filter), and practicing good personal hygiene. Please refer to API Bulletin E2, "Bulletin on Management of Naturally Occurring Radioactive Materials in Oil and Gas Production", April 1, 1992 for additional information on managing NORM.

WORK/HYGIENIC PRACTICES
Use good personal hygiene practices. Avoid repeated and/or prolonged skin exposure. Wash hands before eating, drinking, smoking, or using toilet facilities. Do not eat, drink or smoke in areas of use or storage. Do not use gasoline or solvents (naphtha, kerosene, etc) for washing this product from exposed skin areas. Waterless hand cleansers are effective.

Promptly remove contaminated clothing and launder before reuse. Use care when laundering to prevent the formation of flammable vapors which could ignite via washer or dryer. Consider the need to discard contaminated leather shoes and gloves.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS
Use adequate ventilation to keep vapor and gas concentrations of this product below occupational exposure and flammability limits, particularly in confined spaces. Use explosion-proof equipment and lighting.

EYE/FACE PROTECTION
Wear appropriate eye/face protection to prevent contact with the liquid that could result in burns or tissue damage from frostbite.

SKIN PROTECTION
Avoid repeated or prolonged skin contact. Insulated gloves should be used to prevent the potential of frostbite or cryogenic burns.

RESPIRATORY PROTECTION
This product is a known asphyxiate and air supplied respirators are required if there is a potential for decreased oxygen concentrations.

If exposure assessment indicates NO reduced oxygen content: use a positive pressure, air-supplied respirator if there is a potential for uncontrolled release, exposure levels are not known, or any other circumstance where an airpurifying respirator may not provide adequate protection.

When assessing the proper type of respiratory protection, also consider the occupational exposure limits applicable to individual ingredients.

Refer to OSHA 29 CFR 1910.134, ANSI Z88.2-1992, CSA Standard “Selection, Use and Care of Respirators” (Z94.4-02) and NIOSH Respirator Decision Logic for additional guidance on respiratory protection.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE
A colorless, liquefied gas.

ODOR
A slight sweet hydrocarbon odor. This product may be odorless for some individuals.

BASIC PHYSICAL PROPERTIES

BOILING POINT:	-42.1oC (-40oF) @ 1 ATM
VAPOR PRESSURE:	7162 mm Hg at 25 deg C
MELTING POINT:	-189.7 DEG C,
VAPOR DENSITY	(Air = 1): 1.56 @ 0 o C (AIR= 1)
SPECIFIC GRAVITY:	0.5853 @ -45oC
SOLUBILITY (H2O):	Insoluble
PERCENT VOLATILES:	100
ODOR THRESHOLD:	5,000-20,000 ppm
pH	Not applicable

10. STABILITY AND REACTIVITY

STABILITY: Stable

CONDITIONS TO AVOID (STABILITY)
Material is stable under normal conditions but will rapidly volatilize. Avoid high temperatures, open flames, sparks, welding, smoking and other ignitions sources.

INCOMPATIBLE MATERIALS
Keep away from strong oxidizers, ignition sources and heat.

HAZARDOUS DECOMPOSITION PRODUCTS
Carbon monoxide, carbon dioxide and non-combusted hydrocarbons (smoke).

HAZARDOUS POLYMERIZATION: Will Not Occur.

11. TOXICOLOGICAL INFORMATION

CHRONIC EFFECTS/CARCINOGENICITY
n-Butane has been reported to cause some symptoms in the central nervous system.

Product carcinogenicity according to: NTP: No IARC: No ACGIH: No

12. ECOLOGICAL INFORMATION

Environmental Fate: volatilization is expected to be the dominant fate process.
Provincial, state and federal regulations may require notification of spills. Keep out of sewage, drainage and waterways. Report spills and releases, as applicable, under provincial and local regulations.

13. DISPOSAL CONSIDERATIONS

Incinerate at a licensed disposal facility. Dispose of waste in accordance with all applicable federal, provincial, and/or local regulations.

14. TRANSPORT INFORMATION

PROPER SHIPPING NAME:	LIQUIFIED PETROLEUM GAS,
HAZARD CLASS:	2.1 Flammable Gases
TDG/DOT IDENTIFICATION NUMBER:	UN1075
TDG/DOT SHIPPING LABEL:	Flammable Gas
SHIPPING PAPER DESCRIPTION	LIQUIFIED PETROLEUM GAS, Class 2.1, UN1075

15. REGULATORY INFORMATION

EPA -Environmental Protection Agency

CERCLA Comprehensive Environmental Response, Compensation and Liability Act of 1980
(40 CFR Parts ll7 and 302)
Reportable Quantity (RQ): None

SARA - Superfund Amendment and Reauthorization Act
SECTION 302/304: Requires emergency planning on threshold planning quantities (TPQ)) and release reporting based on reportable quantities (RQ) of EPA s extremely hazardous substances (40 CFR Part 355).

Extremely Hazardous Substances: None
Threshold Planning Quantity (TPQ): None

SECTIONS 311/312: Require submission of material safety data sheets MSDSs) and chemical inventory reporting with identification of EPA-defined hazard classes (40 CFR Part 370). The hazard classes for this product are:

IMMEDTATE: No
PRESSURE: Yes
DELAYED: No
REACTIVITY: No
FLAMMABLE: Yes

SECTION 313: Requires submission of annual reports of release of toxic chemicals that appear in 40 CFR part372.
Propane does not require reporting under Section 313.

40 CFR PART 6E Risk Management for Chemical Accidental Release

Propane does not require reporting under Section 313.

OSHA Occupational Safety and Health Administration

29 CFR 1910.119: Process Safety Management of Highly Hazardous chemicals.

16. OTHER INFORMATION

NFPA 58 *Liquefied Petroleum Gas Code* and OSHA 29 CFR 1910.110 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 to arrange for the required training. Allow only trained and qualified persons to install and service propane containers and systems.

WARNING: Be aware that with odorized propane, the intensity of ethyl mercaptan stench (its odor) may fade due to chemical oxidation (in the presence of rust, air or moisture), adsorption or absorption. Some people have nasal perception problems and may not be able to smell the ethyl mercaptan stench. Leaking propane from underground lines may lose its odor as it passes through certain soils. While ethyl mercaptan may not impart the warning of the presence of propane in every instance, it is generally effective in a majority of situations. Familiarize yourself, your employees and customers with this warning and other facts associated with the so-called “odor-fade” phenomenon. If you do not already know all the facts, contact your propane supplier for more information about odor, electronic gas alarms and other safety considerations associated with the handling, storage and use of propane.

Issue Date: January 2018

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