BLUE STAR GAS
Propane Sales & Service

WE DELIVER VALUE

SAFETY DATA SHEET
FOR ODORIZED PROPANE

1. Chemical Product and Company Identification

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

Name & Address:	Transportation Emergency Number:	Emergency Number:
BLUE STAR GAS 880 N. Wright Rd. Santa Rosa CA 95407	**PERS** 1-800-728-2468	***707-546-1400*** **For Routine Info, Call:** *707-546-1400*

2. Composition/Information on Ingredients

INGREDIENT NAME /CAS NUMBER	PERCENTAGE	OSHA PEL	ACGIH TLV
Propane 74-98-6	87.5-100		Simple asphyxiant
Ethane 74-84-0	0-5.0	1,000 ppm	Simple asphyxiant
Propylene 115-07-1	0-10.0		Simple asphyxiant
Butanes /various	0-2.5		Simple asphyxiant
Ethyl Mercaptan 75-08-1	16-25 ppm	0.5 ppm	0.5 ppm

3. Hazards Identification

EMERGENCY OVERVIEW

DANGER! Flammable liquefied gas under pressure. Keep away from heat, sparks, flame and all other ignition sources. Vapor replaces oxygen available for breathing and may cause suffocation in confined spaces. Use only with adequate ventilation. Odor may not provide adequate warning of potentially hazardous concentrations. Vapor is heavier than air. Liquid can cause freeze burn similar to frostbite. Do not get liquid in eyes, on skin, or on clothing. Avoid breathing of vapor. Keep container valve closed when not in use.

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

*(Ref. NFPA 704)

POTENTIAL HEALTH EFFECTS INFORMATION

ROUTES OF EXPOSURE:
Inhalation: Asphyxiant. It should he noted that before suffocation could occur, the lower flammability limit of propane in air would he exceeded, possibly causing both an oxygen-deficient and explosive atmosphere. Exposure to concentrations >10% may cause dizziness. Exposure to atmospheres containing 8% -10% or less oxygen will bring about unconsciousness without warning, and so quickly that the individuals cannot help or protect themselves. Lack of sufficient oxygen may cause serious injury or death.

Eye Contact: Contact with liquid can cause freezing of tissue.
Skin Contact: Contact with liquid can cause frostbite.
Skin Absorption: None.
Ingestion: Liquid can cause freeze burn similar to frostbite. Ingestion not expected to occur in normal use.
CHRONIC EFFECTS: None.
MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE: None.
OTHER EFFECTS OF OVEREXPOSURE: None.
CARCINOGENICTTY: Propane is not listed by NTP, OSHA or IARC.

4. First Aid Measures

INHALATION: Persons suffering from lack of oxygen should be removed to fresh air If victim is not breathing, administer artificial respiration, If breathing is difficult, administer oxygen. Obtain prompt medical attention.

EYE CONTACT: Contact with liquid can cause freezing of tissue. Gently flush eyes with lukewarm water. Obtain medical attention immediately.

SKIN CONTACT: Contact with liquid can cause frostbite. Remove saturated clothes, shoes and jewelry. Immerse affected area in lukewarm water not exceeding l05° F. Keep immersed. Get prompt medical attention.

INGESTION: If swallowed, get immediate medical attention.

NOTES TO PHYSICIAN: None.

5. Fire-fighting Measures

FLASH POINT: -156° F (-104° C) **AUTOIGNITION:** 842° F (432° C)
IGNITION TEMPERATURE IN AIR: 920-1120° F
FLAMMABLE LIMITS IN AIR BY VOLUME: Lower: 2.15% Upper: 9.6%

EXTINGUISHING MEDIA: Dry chemical, CO^2, 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. Immediately cool container with water spray from maximum distance, taking care not to extinguish flames. If flames are accidentally extinguished, explosive re-ignition may occur. Where water is abundant and immediate, the fire should be allowed to burn while the container and area are cooled and the flow of propane is shut off. Where water is scarce, compare the risk of allowing the area to continue to heat from the fire and the alternative of extinguishing the fire without shutting off the propane flow, which may allow for the propane to accumulate and re-ignite explosively.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Propane is easily ignited. It is heavier than air; therefore, it can collect in low areas where an ignition source can be present. Pressure in a container can build up due to heat and container may rupture if pressure relief devices should fail to function. Propane released from a properly functioning relief valve on an overheated container can also become ignited.

HAZARDOUS COMBUSTION PRODUCTS: None.

6. Accidental Release Measures

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED: Evacuate the immediate area. Eliminate any possible sources of ignition and provide maximum ventilation. Shut off source of propane, if possible. If leaking from container, or valve, contact your supplier.

7. Handling and Storage

HANDLING PRECAUTIONS: Propane vapor is heavier than air and can collect in low areas that are without sufficient ventilation. Leak-check system with a leak detector or solution, never with flame. Make certain the container service valve is shut off prior to connecting or disconnecting. If container valve does not operate properly, discontinue use and contact supplier. Never insert an object (e.g. wrench, screwdriver, pry bar, etc.) into pressure relief valve or cylinder valve cap openings. Do not drop or abuse cylinders. Never strike an arc on a gas container or make a container part of an electrical circuit.
See “16. OTHER INFORMATION” for additional precautions.

STORAGE PRECAUTIONS: Store in a safe, authorized location (outside, detached storage is preferred) with adequate ventilation. Specific requirements are listed in NFPA 58, *Standard for the Storage and Handling* of *Liquefied Petroleum Gases*. Isolate from heat and ignition sources. Containers should never he allowed to reach temperature exceeding 125° F (52°C). Isolate from combustible materials. Provide separate storage locations for other compressed and flammable gases. Propane containers should he separated from oxygen cylinders, or other oxidizers, by a minimum distance of 20 feet, or by a harrier of non-combustible material at least 5 feet high having a fire rating of at least 1/2 hour. Full and empty cylinders should he segregated. Store cylinders in upright position, or with pressure relief valve in vapor space. Do not drop or abuse cylinders. Keep container valve closed and plugged or capped when not in use. Install protective caps when cylinders are not connected for use. Empty containers retain some residue and should be treated as if they were full.

8. Exposure Controls/Personal Protection

ENGINEERING CONTROLS
Ventilation: Provide ventilation adequate to ensure propane does not reach a flammable mixture.

RESPIRATORY PROTECTION (SPECIFY TYPE)
General Use: None.
Emergency Use: If concentrations are high enough to warrant supplied-air or self-contained breathing apparatus, then the atmosphere may be flammable (See Section *5).* Appropriate precautions must he taken regarding flammability.

PROTECTIVE CLOTHING: Avoid skin contact with liquid propane because of possibility of freeze burn. Wear gloves and protective clothing which are impervious to the product for the duration of the anticipated exposure.

EYE PROTECTION: Safety glasses are recommended when handling cylinders.

OTHER PROTECTIVE EQUIPMENT: Safety shoes are recommended when handling cylinders.

9. Physical and Chemical Properties

BOILING POINT: @ 14.7 psia = - 44° F
SPECIFIC GRAVITY OF VAPOR (Air = 1) at 60° F: 1.50
SPECIFIC GRAVITY OF LIQUID (Water = 1) at 60° F: 0.504
VAPOR PRESSURE: @ 70° F = 127 psig
@ 105° F= 210 psig

EXPANSION RATIO (From liquid to gas @ 14.7 psia): 1 to 270

SOLUBILITY IN WATER: Slight, 0.1 to 1.0%

APPEARANCE AND ODOR: A colorless and tasteless gas at normal temperature and pressure.
An odorant (ethyl mercaptan) has been added to provide a strong unpleasant odor. Should a propane-air mixture reach the lower limits of flammability, the ethyl mercaptan concentration will be approximately 0.5 ppm in air.

ODORANT WARNING: Odorant is added to aid in the detection of leaks. One common odorant is ethyl mercaptan, CAS No. 75-08-01. Odorant has a foul smell. The ability of people to detect odors varies widely. Also, certain chemical reactions with material in the propane system, or fugitive propane gas from underground leaks passing through certain soils, can reduce the odor level. No odorant will he 100% effective in all circumstances. If odorant appears to be weak, notify propane supplier immediately.

10. Stability and Reactivity

STABILITY: Stable.
Conditions to Avoid: Keep away from high heat, strong oxidizing agents and sources of ignition.

REACTIVITY:
Hazardous Decomposition Products: Under fire conditions, fumes, smoke, carbon monoxide, aldehydes and other decomposition products. When used as an engine fuel, incomplete combustion can cause carbon monoxide, a toxic gas.
Hazardous polymerization: Will not occur.

11. Toxicological Information

Propane is non-toxic and is a simple asphyxiant, however, it does have slight anesthetic properties and higher concentrations may cause dizziness.

[IRRITANCY OF MATERIAL]: None.
[SENSITIZATION TO MATERIAL]: None
[REPRODUCTIVE EFFECTS]: None
[TERATOGENICITY]: None
[MUTAGENICITY]: None
[SYNERGISTIC MATERIALS]: None

12. Ecological Information

No adverse ecological effects are expected. Propane does not contain any Class I or Class II ozone-depleting chemicals (40 CFR Part 82). Propane is not listed as a marine pollutant by DOT (49 CFR Part 171)

13. Disposal Considerations

WASTE DISPOSAL METHOD: Do not attempt to dispose of residual or unused product in the container. Return to supplier for safe disposal.
Residual product within process system may be burned at a controlled rate, if a suitable burning unit (flare stack) is available on site. This shall be done in accordance with federal, state and local regulations.

14. Transport Information

DOT SHIPPING NAME: Liquefied Petroleum Gas
HAZARD CLASS: 2.1 (Flammable Gas)
IDENTIFICATION NUMBER: UN 1075
PRODUCT RQ: None
SHIPPING LABEL(S): Flammable gas
IMO SHIPPING NAME: Propane
PLACARD (WHEN REQUIRED): Flammable gas
IMO IDENTIFICATION NUMBER: UN 1978
SPECIAL SHIPPING INFORMATION: Container should be transported in a secure, upright position in a well-ventilated vehicle.

15. Regulatory Information

The following information concerns selected regulatory requirements potentially applicable to this product. Not all such requirements are identified. Users of this product are responsible for their own regulatory compliance on a federal, state provincial and local level.

U.S. FEDERAL REGULATIONS

EPA Environmental Protection Agency

CERCLA Comprehensive Environmental Response, Compensation and Liability Act of 1980 (40 CFR Parts 117 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 (MSDS5) and chemical inventory reporting with identification of EPA-defined hazard classes (40 CFR Part 370). The hazard classes for this product are:

IMMEDIATE: 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 Part 372.

Propane does not require reporting under Section 3 13.

40 CFR PART 68 Risk Management for Chemical Accidental Release

TSCA Toxic Substance Control Act

Propane is listed on the TSCA inventory.

OSHA Occupational Safety and Health Administration

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

FDA Food and Drug Administration

21 CFR 184.1655: Generally recognized as safe **(GRAS)** as **a** direct human food ingredient when used as a propellant, aerating agent and gas.

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 he 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 gas 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 INFORMATION

Issue Date: *10/01/25*

This material safety data sheet and the information it contains is offered to you in good faith as accurate. BLUE STAR GAS does not manufacture this product but is a supplier of the product independently manufactured 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 BLUE STAR GAS does not guarantee its accuracy or completeness. Health and safety precautions in this data sheet may not he 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.

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