



SAFETY DATA SHEET (SDS)

Material/Product Name: Propane

SDS No. 6182

US GHS

SECTION 1 — COMPANY IDENTIFICATION AND CHEMICAL PRODUCT

Manufacturer/Supplier:

WIN Propane LLC
1674 Green Bay Road
Wever, IA 52658

Tank, Rail Car, Tank Truck Emergency:

CHEMTREC 1-800-424-9300

Emergency Driver: 319-470-3567

Routine Information: 800-728-2285

Product Name: Odorized Commercial Propane

Common Names: Propane; Liquefied Petroleum Gas (LPG); LP-Gas; Dimethylmethane; Propyl Hydride

Chemical Name: Propane; Dimethylmethane

Chemical Formula: C₃H₈

Chemical Family: Paraffin Hydrocarbon

SECTION 2 — COMPOSITION AND INFORMATION ON INGREDIENTS

Ingredients	Percentages (by weight)	PEL (OSHA)	TLV (ACGIH)	CAS #
Propane	87.5-100%	1000 ppm TWA	2500 ppm TWA Simple Asphyxiant	74-98-6
Ethane	0-5%			74-84-0
Propylene	0-10%			115-07-1
Butanes	0-2.5%	0.5 PPM	0.5 ppm	Various
Ethyl Mercaptan	16-25 PPM			75-08-1

NOTE: Ethyl Mercaptan added as an odorant

(TWA) — Time weighted average is the employee's average airborne exposure in any 8-hour work shift of a 40-hour work week, which shall not be exceeded.

(STEL) — Short term exposure limit is the employee's 15-minute time weighted average exposure, which shall not be exceeded at any time during a work day unless another time limit is specified.

SECTION 3 — HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

DANGER! Flammable liquefied gas under pressure. Extremely flammable. Compressed gas. Keep away from heat, sparks, flame, and all other ignition sources. Vapor releases 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, or skin, or on clothing. Avoid breathing of vapor. Keep container valve closed when not in use. Caution: Ethyl Mercaptan used as a warning agent may not be entirely effective in all situations (see Section 10). Use combustible gas indicator or similar device if you suspect a leak.

OSHA HAZARD CLASS Based on OSHA definitions, the following ingredients in this product are hazardous. The OSHA physical and health hazard categories are shown below. **Note: WIN Propane LLC has not conducted specific toxicity tests on this product. Our hazard evaluation is based on information from similar ingredients, technical literature, and/or professional experience.** Propane — Flammable Gas, Compressed Gas, Asphyxiant

POTENTIAL HEALTH EFFECTS

Routes of Entry: Inhalation, Dermal.

Acute Effects of Overexposure:

Eyes — Contact with liquid can cause freezing of tissues.

Skin — Contact with liquid can cause burns similar to frostbite.

Inhalation — Asphyxiant. At very high concentrations can displace the normal air and cause suffocation from lack of oxygen.

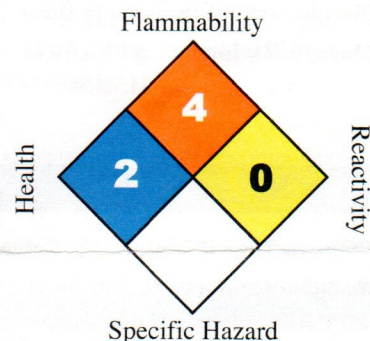
Symptoms of lack of oxygen include increased depth and frequency of breathing, dizziness, headache, nausea, or loss of consciousness.

Ingestion — Liquid can cause freeze burns similar to frostbite. Ingestion not expected to occur in normal use.

Chronic Effects of Overexposure: None determined.

Conditions Aggravated by Exposure: Personnel with pre-existing chronic respiratory diseases should avoid exposure to this material.

Carcinogenicity: NTP: No IARC: No OSHA: No



NFPA® Hazard Ratings:

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



SECTION 4 — FIRST AID MEASURES

Eye Contact — If liquid propane contacts the eye, flush thoroughly with water for at least 15 minutes, occasionally lifting the upper and lower lids, until no evidence of chemical remains. Get medical attention as soon as possible.

Skin Contact — Frozen tissue should be flushed with plenty of tepid water. Do not use hot water. Cryogenic (low temperature) burns that result in blistering or deeper tissue freezing should be promptly treated by a physician.

Inhalation — Move person to fresh air. If large amounts have been inhaled, keep victim warm and get medical attention. Apply artificial respiration if not breathing.

Ingestion — If swallowed get immediate medical attention.

Notes To Physician — None.

SECTION 5 — FIRE-FIGHTING MEASURES

Flash Point: -156°F (104°C) **Auto Ignition Temperature:** 842°F (432°C) **Ignition Temperature in Air:** 920-1120°F

Flammable Limits in Air % by Volume	Lower	Upper
	2.1	9.5

Extinguishing Media: Do not extinguish gas fire unless the gas flow can be stopped. To extinguish a small fire, use dry chemical and Carbon Dioxide (CO₂). For large fires, use water spray or fog and move containers from area if you can do so without risk.

Special Fire-fighting Procedures: Shut off gas source and allow the fire to burn itself out. Gas fires should not be extinguished unless the gas flow can be stopped immediately. Keep unnecessary people away; isolate hazard area and deny entry. Stay upwind, out of low areas, and ventilate closed spaces before entering. Positive pressure self-contained breathing apparatus (SCBA) and structural firefighters' protective clothing will provide limited protection.

Fire Involving Tank, Rail Car, or Tank Truck: Isolate for 1600 meters (1 mile) in all directions; also, consider initial evacuation for 1600 meters (1 mile) in all directions. Call CHEMTREC at 1-800-424-9300 as soon as possible.

Unusual Fire and Explosion Hazards: Vapors are heavier than air and may travel along the ground to a source of ignition (pilot light, heater, electric motor) some distance away. Withdraw immediately in case of rising sound from venting safety devices or any discoloration of tank due to fire.

Hazard Ratings:	NFPA 704:	Health <u>2</u>	Fire <u>4</u>	Reactivity <u>0</u>
	HMIS:	Health <u>2</u>	Fire <u>4</u>	Reactivity <u>0</u>

SECTION 6 — ACCIDENTAL RELEASE MEASURES

Steps to Take if Material is Released or Spilled: Evacuate the immediate area. REMOVE ALL SOURCES OF IGNITION. Provide maximum ventilation. Notify emergency response personnel as appropriate. Keep unnecessary people away; isolate hazard area and deny entry. Vapors can be dispersed with sustained water spray. NOTE: Review Section 5 — FIRE-FIGHTING MEASURES (above) before proceeding with clean up. Use appropriate personal protective equipment during emergency response.

SECTION 7 — HANDLING AND STORAGE

Handling and Storage: Consult the U.S. Department of Transportation regulations on the shipping of petroleum gases. 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 the 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. If upon initial receipt and inspection a cylinder is found to be in poor condition, contact the supplier. The most common hazard is leakage due to faulty pressure control regulators. Large pressure build-up can result in explosive decompression at the cylinder head, causing the cylinder to rocket like a missile. Prevent entrapment of liquid in closed system. Use check valve to prevent back-flow into storage container. Chain cylinders when not in use. Cylinder storage should be segregated from oxidizers such as oxygen, chlorine, etc., and away from heavy traffic areas to prevent knocking over or damage by falling objects. Valve caps should remain on cylinders.

SECTION 8 — EXPOSURE CONTROLS — PERSONAL PROTECTION

Engineering Controls — Local exhaust and general ventilation may both be necessary in work area to prevent accumulation of explosive mixtures. Provide special ventilation in sumps and confined spaces. If mechanical ventilation is used, electrical equipment must meet National Electrical Code requirements.

Respiratory Equipment — Appropriate precautions must be taken regarding flammability. Personnel should never enter an area of high concentration without proper respiratory protection. Provide NIOSH-approved supplied-air respirator or self-contained breathing apparatus (SCBA) for emergency or non-routine situations where the level is excessive (See Section 5 — FIRE FIGHTING MEASURES).

Eye Protection — Use face shield or chemical type goggles where contact with material may occur such as when changing valves, hoses, etc.

Protective Clothing — Use protective clothing, face shield, and/or gloves when contact with liquid propane is possible. Safety shoes are recommended when handling cylinders.



Other (Safety Showers, Eye Wash Stations, etc.): Emergency eye wash fountains and safety showers for first aid treatment of potential freeze burns should be available in the vicinity of any significant exposure from compressed gas release.

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Colorless gas (liquid under pressure)

Boiling Point: 760 mmHg, @ 14.7 psia = -44°F

Vapor Pressure: 190 psia, @ 70°F = 127 psig
@ 105°F = 210 psig

Soluble in Water: Very slightly soluble:
0.1 to 1.0%

pH: N/A

Odor: If odorized, will have rotten egg odor, otherwise odorless.

Specific Gravity (water=1): @60°F: 1.5

Vapor Density (air=1): @ 60°F: 0.504

Expansion Ratio (liquid to gas @14.7 psia): 1 to 270

Signal Word: Danger

GHS Label Elements Symbol(s)



SECTION 10 — STABILITY AND REACTIVITY

Stability: Stable at normal temperature and storage conditions.

Conditions to avoid: Heat, sparks, flame, build-up of static electricity, and other sources of ignition. Note: Ethyl Mercaptan might, under certain conditions (when oxygen, water, iron oxide or other oxidizers are present in containers or piping) react with oxidizers, which diminish or eliminate entirely its distinct smell, reducing the warning properties of the Ethyl Mercaptan.

Materials to avoid: Strong acids, alkalies and oxidizers such as chlorine (gas or liquid) and oxygen.

Hazardous Decomposition Products: Products of combustion are fumes, smoke, carbon monoxide, and aldehydes and other decomposition products. Incomplete combustion can cause carbon monoxide, a toxic gas while burning, or when used as an engine fuel.

Hazardous Polymerization: Has not been reported to occur.

SECTION 11 — TOXICOLOGY 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

[Teratogenicity]: None

[Sensitization to Materials]: None

[Reproductive Effects]: None

[Synergistic Materials]: None

[Mutagenicity]: None

SECTION 12 — ECOLOGICAL INFORMATION

No adverse ecological effects are expected. Propane does not contain any Class I or Class II ozone-depletion chemicals (40 CFR Part 82). Propane is not listed as a marine pollutant by DOT (49 CFR Part 171). WIN Propane LLC has not conducted specific ecological tests on this product.

SECTION 13 — DISPOSAL CONSIDERATION

Waste disposal procedures: 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. Treatment, storage, transportation and disposal must be in accordance with applicable federal, state and local regulations.



SECTION 14 — TRANSPORTATION INFORMATION

DOT Proper Shipping Name: Liquefied Petroleum Gases **DOT Placard/Shipping:** Flammable Gas (when required)
DOT Hazard Class: 2.1 (Flammable Gas) **IMO Identification Number:** UN 1978
DOT Identification Number: UN 1075 **DOT Emergency Response Guide #:** 115 (Formerly #22)
Product RQ: None **Special Shipping Information:** Container should be transported in a secure, upright position in a well-ventilated vehicle.
IMO Shipping Name: Propane



SECTION 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 & 302)
RQ: Reportable Quantity: 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 CPF Part 355).
Extremely Hazardous Substances: None **Threshold Planning Quantity (TPQ):** None
 - ◆ **SECTION 311/312:** Require submission of Safety Data Sheets (SDS) and chemical inventory reporting with identification of EPA-defined hazard classed (40 CPF Part 370). The hazard classes for this product are:
Immediate: No **Pressure:** Yes **Delayed:** No **Reactivity:** No **Flammable:** No
 - ◆ **SECTION 311/313:** Requires submission of annual reports of release of toxic chemicals that appear in 40 CFR Part 372. Propane does not require reporting under Section 313.
- 40 CFR PART 68:** Risk Management for Chemical Accident 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.

SECTION 16 — OTHER INFORMATION

SPECIAL PRECAUTIONS: Use piping and equipment adequately designed to withstand pressure to be encountered. NFPA 58 Standard for the Storage and Handling of Liquefied Petroleum Gases 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 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 Information: **Date:** December 5, 2015 **By:** Ben Winke **For:** WIN Propane LLC **Reason:** Duty-To-Warn

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