



MATERIAL SAFETY DATA SHEET

Propane

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Propane
Synonyms: Commercial Propane
HD5 Propane
LP-Gas
Liquefied Petroleum Gas
Odorized Propane
Propane (Unstened)
Propane Commercial
Propane Motor Fuel
Propane for Process
Stened Propane
Unodorized Propane

Intended Use: Fuel
Chemical Family: Petroleum Gas

Responsible Party: ConocoPhillips
600 N. Dairy Ashford
Houston, Texas 77079-1175
800-762-0942
MSDS@conocophillips.com

MSDS Information:

Customer Service: 281-293-2471
Technical Information: 580-767-5611

Emergency Overview

24 Hour Emergency Telephone Numbers:

Spill, Leak, Fire or Accident Call CHEMTREC:

North America: (800) 424-9300

Others: (703) 527-3887 (collect)

California Poison Control System: (800) 356-3219

Health Hazards/Precautionary Measures: Gas may reduce oxygen available for breathing. Liquefied gas may cause eye and skin burns and frostbite. Use with ventilation adequate to keep exposure below recommended limits, if any. Avoid contact with eyes, skin and clothing.

Physical Hazards/Precautionary Measures: Flammable gas. Can cause flash fire. Liquefied petroleum gas. Contents under pressure. Keep away from heat, sparks, flames, static electricity or other sources of ignition. Do not enter storage areas or confined space unless adequately ventilated.

Appearance: Colorless
Physical Form: Gas or Liquid (Under Pressure)
Odor: Odorless (or skunk, rotten egg or garlic if odorant added)

NFPA 704 Hazard Class:

Health: 2 (Moderate)
Flammability: 4 (Extreme)
Instability: 0 (Least)

2. COMPOSITION / INFORMATION ON INGREDIENTS

HAZARDOUS COMPONENTS					
Component / CAS No:	Concentration (wt %)	ACGIH:	OSHA:	NIOSH:	Other:
Propane 74-98-6	80 - 100	1000 ppm TWA	1000 ppm TWA 1800 mg/m ³ TWA	2100 ppm IDLH	as Aliphatic Hydrocarbon Gases: Alkane (C1-C4)
Propylene 115-07-1	<20	1000 ppm TWA	NE	NE	as Aliphatic Hydrocarbon Gases: Alkane (C1-C4)
Ethane 74-84-0	< 6	1000 ppm TWA	NE	NE	as Aliphatic Hydrocarbon Gases: Alkane (C1-C4)
n-Pentane 109-66-0	<2.5	600 ppm TWA	1000 ppm TWA	1500 ppm IDLH	----

Odorized products contain small quantities (<0.1%) ethyl mercaptan as an olfactory indicator. Contains less than 2.5% total butanes and higher.

HD-5 COMPOSITION: Propane >90%, Propylene <5%

Note: State, local or other agencies or advisory groups may have established more stringent limits. Consult an industrial hygienist or similar professional, or your local agencies, for further information.

1%=10,000 PPM.

NE=Not Established

3. HAZARDS IDENTIFICATION

Potential Health Effects

Eye: Contact with the liquefied or pressurized gas may cause momentary freezing followed by swelling and eye damage.

Skin: Contact with the liquefied or pressurized gas may cause frostbite ("cold" burn). This material is a gas under normal atmospheric conditions. No harmful effects from skin absorption are expected.

Inhalation (Breathing): Asphyxiant. High concentrations in confined spaces may limit oxygen available for breathing. See Signs and Symptoms.

Ingestion (Swallowing): This material is a gas under normal atmospheric conditions and ingestion is unlikely.

Signs and Symptoms: Light hydrocarbon gases are simple asphyxiants and can cause anesthetic effects at high concentrations. Symptoms of overexposure, which are reversible if exposure is stopped, can include shortness of breath, drowsiness, headaches, confusion, decreased coordination, visual disturbances and vomiting. Continued exposure can lead to hypoxia (inadequate oxygen), cyanosis (bluish discoloration of the skin), numbness of the extremities, unconsciousness and death.

Cancer: There is inadequate information to evaluate the cancer hazard of this material. See Section 11 for information on the individual components, if any.

Target Organs: Inadequate data available for this material.

Developmental: No data available for this material.

Other Comments: High concentrations may reduce the amount of oxygen available for breathing, especially in confined spaces. Hypoxia (inadequate oxygen) during pregnancy may have adverse effects on the developing fetus. Exposure during pregnancy to high concentrations of carbon monoxide or carbon dioxide, which are produced during the combustion of hydrocarbon gases, can also cause harm to the developing fetus.

For products that have been odorized, 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. Other odors may mask or hide the ethyl mercaptan stench. While ethyl mercaptan may not warn of the presence of propane in every instance, it is generally effective in a majority of situations.

Pre-Existing Medical Conditions: Exposure to high concentrations of this material may increase the sensitivity of the heart to certain drugs. Persons with pre-existing heart disorders may be more susceptible to this effect (see Section 4 - Note to Physicians).

4. FIRST AID MEASURES

Eye: For contact with the liquefied gas, hold eyelids apart and gently flush the affected eye(s) with lukewarm water. Seek immediate medical attention.

Skin: Treat burned or frostbitten skin by flushing or immersing the affected area(s) in lukewarm water. After sensation has returned to the frostbitten skin, keep skin warm, dry, and clean. If blistering occurs, apply a sterile dressing. Seek immediate medical attention.

Inhalation (Breathing): If respiratory symptoms develop, move victim away from source of exposure and into fresh air. If symptoms persist, seek medical attention. If victim is not breathing, clear airway and immediately begin artificial respiration. If breathing difficulties develop, oxygen should be administered by qualified personnel. Seek immediate medical attention.

Ingestion (Swallowing): This material is a gas under normal atmospheric conditions and ingestion is unlikely.

Notes to Physician: Epinephrine and other sympathomimetic drugs may initiate cardiac arrhythmias in persons exposed to high concentrations of hydrocarbon solvents (e.g., in enclosed spaces or with deliberate abuse). The use of other drugs with less arrhythmogenic potential should be considered. If sympathomimetic drugs are administered, observe for the development of cardiac arrhythmias.

5. FIRE-FIGHTING MEASURES

Flammable Properties:

Flash Point:	-156°F / -104°C
Test Method:	Tag Closed Cup (TCC), ASTM D56
OSHA Flammability Class:	Flammable Gas
LEL%:	2.1
UEL%:	9.5
Autoignition Temperature:	842°F / 432°C

Unusual Fire & Explosion Hazards: This material is flammable and can be ignited by heat, sparks, flames, or other sources of ignition (e.g., static electricity, pilot lights, or mechanical/electrical equipment, and electronic devices such as cell phones, computers, calculators, and pagers which have not been certified as intrinsically safe). Vapors may travel considerable distances to a source of ignition where they can ignite, flash back, or explode. May create vapor/air explosion hazard indoors, in confined spaces, outdoors, or in sewers. Vapors are heavier than air and can accumulate in low areas. If container is not properly cooled, it can rupture in the heat of a fire. Closed containers exposed to extreme heat can rupture due to pressure buildup.

Extinguishing Media: Dry chemical or carbon dioxide is recommended. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces.

Fire Fighting Instructions: For fires beyond the incipient stage, emergency responders in the immediate hazard area should wear bunker gear. When the potential chemical hazard is unknown, in enclosed or confined spaces, or when explicitly required by DOT, a self contained breathing apparatus should be worn. In addition, wear other appropriate protective equipment as conditions warrant (see Section 8).

Isolate immediate hazard area, keep unauthorized personnel out. Move undamaged containers from immediate hazard area if it can be done with minimal risk. Stay away from ends of container. Stop spill/release if it can be done with minimal risk. If this cannot be done, allow fire to burn. Cool equipment exposed to fire with water, if it can be done with minimal risk.

Water spray may be useful in minimizing or dispersing vapors and to protect personnel. Cool equipment exposed to fire with water, if it can be done with minimal risk.

6. ACCIDENTAL RELEASE MEASURES

Flammable. Keep all sources of ignition and hot metal surfaces away from spill/release. The use of explosion-proof electrical equipment is recommended.

Stay upwind and away from spill/release. Notify persons down wind of the spill/release, isolate danger area and keep unauthorized personnel out. Stop spill/release if it can be done with minimal risk. Wear appropriate protective equipment including respiratory protection as conditions warrant (see Section 8).

Water spray may be useful in minimizing or dispersing vapors (see Section 5). Notify fire authorities and appropriate federal, state, and local agencies. If spill of any amount is made into or upon navigable waters, the contiguous zone, or adjoining shorelines, notify the National Response Center (phone number 800-424-8802).

7. HANDLING AND STORAGE

Handling: Contents under pressure. The use of explosion-proof electrical equipment is recommended and may be required (see appropriate fire codes). Refer to NFPA-704 and/or API RP 2003 for specific bonding/grounding requirements.

Do not enter confined spaces such as tanks or pits without following proper entry procedures such as ASTM D-4276 and 29CFR 1910.146. The use of appropriate respiratory protection is advised when concentrations exceed any established exposure limits (see Sections 2 and 8).

Use good personal hygiene practices.

"Empty" containers retain residue and may be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury or death. Containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations.

Before working on or in tanks which contain or have contained this material, refer to OSHA regulations, ANSI Z49.1 and other references pertaining to cleaning, repairing, welding, or other contemplated operations.

Storage: Keep container(s) tightly closed. Use and store this material in cool, dry, well-ventilated areas away from heat, direct sunlight, hot metal surfaces, and all sources of ignition. Post area "No Smoking or Open Flame." Store only in approved containers. Keep away from any incompatible material (see Section 10). Protect container(s) against physical damage. Outdoor or detached storage is preferred.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering controls: If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure limits (see Section 2), additional engineering controls may be required. Where explosive mixtures may be present, electrical systems safe for such locations must be used (see appropriate electrical codes).

Personal Protective Equipment (PPE):

Respiratory: Use a NIOSH approved self-contained breathing apparatus (SCBA) or equivalent operated in a pressure demand or other positive pressure mode in oxygen deficient environments (oxygen content <19.5%) or if exposure concentration is unknown or if conditions immediately dangerous to life or health (IDLH) exist.

A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

Skin: The use of thermally resistant gloves is recommended.

Eye/Face: Approved eye protection to safeguard against potential eye contact, irritation, or injury is recommended. Depending on conditions of use, a face shield may be necessary.

Other Protective Equipment: A source of clean water should be available in the work area for flushing eyes and skin. Impervious clothing should be worn as needed.

Suggestions for the use of specific protective materials are based on readily available published data. Users should check with specific manufacturers to confirm the performance of their products.

9. PHYSICAL AND CHEMICAL PROPERTIES

Note: Unless otherwise stated, values are determined at 20°C (68°F) and 760 mm Hg (1 atm).

Appearance:	Colorless
Physical Form:	Gas or Liquid (Under Pressure)
Odor:	Odorless (or skunk, rotten egg or garlic if odorant added)
Odor Threshold:	No data
pH:	Not applicable
Vapor Pressure (mm Hg):	208 psi @ 100°F (38°C) (maximum)
Vapor Density (air=1):	No data
Boiling Point:	-44°F / -42°C
Melting/Freezing Point:	-309°F / -190°C
Solubility in Water:	Negligible

9. PHYSICAL AND CHEMICAL PROPERTIES

Partition Coefficient (n-octanol/water) (Kow):	No data
Specific Gravity:	0.50-0.51@ 60°F (15.6°C)
Percent Volatile:	100%
Evaporation Rate (nBuAc=1):	>1
Flash Point:	-156°F / -104°C
Test Method:	Tag Closed Cup (TCC), ASTM D56
LEL%:	2.1
UEL%:	9.5
Autoignition Temperature:	842°F / 432°C

10. STABILITY AND REACTIVITY

Stability: Stable under normal ambient and anticipated storage and handling conditions of temperature and pressure. Flammable gas.

Conditions to Avoid: Avoid high temperatures and all sources of ignition (see Sections 5 and 7).

Materials to Avoid (Incompatible Materials): Avoid contact with strong oxidizing agents.

Hazardous Decomposition Products: Combustion can yield carbon dioxide, carbon monoxide.

Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Chronic Data:

No definitive information available on carcinogenicity, mutagenicity, target organ, or developmental toxicity.

Acute Data:

12. ECOLOGICAL INFORMATION

There is no information available on the ecotoxicological effects of petroleum gases. Because of their high volatility, they are unlikely to cause ground or water pollution. Petroleum gases released into the environment will rapidly disperse into the atmosphere and undergo photochemical degradation.

13. DISPOSAL CONSIDERATIONS

This material is a gas and is not typically managed as a RCRA solid waste.

14. TRANSPORT INFORMATION

DOT

Shipping Description: Propane, 2.1, UN1978

Non-Bulk Package Marking: Propane, UN1978

Non-Bulk Package Labeling: Flammable gas

Bulk Package/Placard Marking: Flammable gas/1978

Packaging - References (Exceptions, Non-Bulk, Bulk): 49 CFR 173.304, 173.306, 173.314, 173.315

Hazardous Substance: None

Emergency Response Guide: 115

Note: See 172.102, special provisions, code 19 for domestic ID number exception

IMDG

Shipping Description: UN1978, Propane, 2.1

Non-Bulk Package Marking: Propane, UN1978

Labels: Flammable gas

Placards/Marking (Bulk): Flammable gas/1978

Packaging - Non-Bulk: P200

14. TRANSPORT INFORMATION

EMS: F-D, S-U

ICAO/IATA

UN/ID #: UN1978
Proper Shipping Name: Propane
Hazard Class/Division: 2.1
Packing Group: None
Subsidiary risk: None
Non-Bulk Package Marking: Propane, UN1978
Labels: Flammable gas
Note: Section A4, special provision A1 applies to this product

	LTD. QTY.	Passenger Aircraft	Cargo Aircraft Only
Packaging Instruction #:	None	Forbidden	200
Max. Net Qty. Per Package:	None	Forbidden	150 kg

15. REGULATORY INFORMATION

U.S. Regulations:

EPA SARA 311/312 (Title III Hazard Categories)

Acute Health: Yes
Chronic Health: No
Fire Hazard: Yes
Pressure Hazard: Yes
Reactive Hazard: No

SARA - Section 313 and 40 CFR 372:

This material contains the following chemicals subject to the reporting requirements of SARA 313 and 40 CFR 372:
Propylene.....115-07-1.....<20%

EPA (CERCLA) Reportable Quantity (in pounds):

EPA's Petroleum Exclusion applies to this material - (CERCLA 101(14)).

CERCLA/SARA - Section 302 Extremely Hazardous Substances and TPQs (in pounds):

This material contains the following chemicals subject to the reporting requirements of SARA 302 and 40 CFR 372:
-- None Known --

California Proposition 65:

Warning: This material contains the following chemicals which are known to the State of California to cause cancer, birth defects or other reproductive harm, and are subject to the requirements of California Proposition 65 (CA Health & Safety Code Section 25249.5):
-- None Known --

Carcinogen Identification:

This material has not been identified as a carcinogen by NTP, IARC, or OSHA.

TSCA:

All components are listed on the TSCA inventory.

International Regulations:

Canadian Regulations:

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

Domestic Substances List: Listed

WHMIS Hazard Class:

A - Compressed Gas

B1 - Flammable Gases

16. OTHER INFORMATION

Issue Date:	21-Mar-2006
Previous Issue Date:	01-Jun-2005
Product Code:	1051357, 1051358
Previous Product Code:	None
Revised Sections or Basis for Revision:	Composition (Section 2) Physical Properties (Section 9)
MSDS Code:	169570

Disclaimer of Expressed and implied Warranties:

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