



McPhail Fuel Company  
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# Material Safety Data Sheet

Emergency Contact: PERS (for spills, leaks, or accidents, only)  
 Emergency (24 hours) Phone: 800 633-8253

## Section 1 - Identification

Product: Propane (odorized)  
 Chemical Family: Aliphatic Hydrocarbon, Alkane Series  
 Synonyms: Dimethyl Methane, LP-Gas, Liquid Petroleum Gas, LPG

## Section 2 – Hazardous Chemical Components

Component: Propane  
 Chemical Formula: C<sub>3</sub>H<sub>8</sub>  
 CAS Number: 74-98-6

Composition and Percentage of Each (If Applicable)

Ingredient Name	CAS Number	Concentration*	Exposure Limits/health Hazards
Propane	74-98-6	92 - 100%	simple asphyxiant(ACGIH) 1000 ppm 8-hour TWA
Ethane	74-84-0	0 - 7%	simple asphyxiant(ACGIH)
Iso-Butane	75-28-5	0 - 2.5%	No Data
Propylene	115-07-01	0 - 1.5%	simple asphyxiant(ACGIH)
N- Butane	106-97-8	0 - 1%	(ACGIH)800ppm 8-hour TWA(ACGIH)
Ethyl Mercaptan	75-08-1	0 - 50ppm	0.5ppm 8-hourTWA(ACGIH)

- Values do not reflect absolute minimums and maximums; these values are typical which may vary from time to time.

## Section 3 – Physical Data

Boiling Point: - 45°F	Molecular Weight: 44
Appearance: Colorless gas or liquid	Odor: Odorized propane contains a foul smelling warning agent (ethyl mercaptan).
Vapor Pressure: 188 psi @100°F	Unodorized propane is odorless (natural state)
Specific Gravity: .504 @ 60°F	
Solubility (H <sub>2</sub> O): <0.1%	
Evaporation Rate: Gas at normal ambient conditions.	

## Section 4 – Fire Fighting & Explosive Data

Freezing point; - 305°F

Flash Point: - 156°F  
Auto Ignition: 842°F  
Lower Explosive Limit (%): 2.3  
Upper Explosive Limit (%) 9.5

#### Extinguishing Media

Water spray, Dry chemical, CO2, or Halon

#### Special Fire Fighting Instructions

This product presents an extreme fire hazard. Liquid quickly evaporates, even at low temperatures, and forms vapor (fumes) which can catch fire and burn with explosive violence.

Evacuate the area. Stay upwind of vapors. Stop flow of gas. Use water to keep fire exposed containers and piping cool. Use water spray to disperse un-ignited gas. Invisible vapor spreads easily and can be set on fire by many sources such as pilot lights, welding equipment, and electrical motors or switches. If ignition has occurred and no water is available, tank or piping may overheat and fail. Approach containers from sides, not from ends.

Do not enter enclosed or confined fire space without proper protective equipment. This may include self-contained breathing apparatus to protect against hazardous effects of normal products of combustion or oxygen deficiency. Petroleum gases are heavier than air and travel along the ground or into drains to possible distant ignition sources and may cause an explosive flashback.

#### Combustion Products:

Normal combustion forms carbon dioxide and water vapor, incomplete combustion can produce carbon monoxide.

#### NFPA RATINGS:

Health:	1	(Scale: least -- 0, Slight -- 1, Moderate -- 2
Flammability:	4	High -- 3, Extreme --4)
Reactivity:	0	

These values are obtained using the guidelines or published evaluations from the National Fire Protection Association or the National Paint and Coating Association.

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### **Section 5 – Exposure Effects and First Aid**

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#### INHALATION

##### Route of Exposure - Inhalation:

Depending on the concentration of gas and duration of exposure, small concentrations may produce rapid breathing and headaches. Moderate concentrations may produce mild intoxication, drowsiness, dizziness, visual disturbances, muscular weakness, and lack of coordination. High concentrations produce intoxication followed by loss of consciousness, asphyxiation, and death.

##### First Aid - Inhalation:

Immediately move personnel to an area of fresh air. For respiratory distress, give air, oxygen or administer CPR if necessary. Obtain medical attention if breathing difficulties continue.

#### SKIN

##### Route of Exposure - Skin

In its gas form, this material is non-irritating and is not expected to be absorbed through the skin; but direct contact with the liquefied/pressurized gas and frost particles can cause freeze burns (similar to that of frost bite).

First Aid - Skin:

Frozen tissue should be flooded or soaked with warm water. DO NOT USE HOT WATER! Cryogenic burns, which result in blistering or deeper tissue freezing, should be promptly seen by a physician.

EYES

Route of Exposure -Eyes:

As a gas, this material is non-irritating; but direct contact with liquefied /pressurized gas or frost particles may produce severe and possibly permanent eye damage from freeze burns.

First Aid - Eyes:

Vapors are not expected to present an eye irritation hazard. If contacted by liquid/solid, immediately flush eye(s) gently with warm water for at least 15 minutes. Seek medical attention if pain or redness persists.

INGESTION

Route of exposure - Ingestion:

Solid, liquefied, and pressurized forms of this gas can cause freeze burns.

First Aide - Ingestion:

Induce vomiting with warm water (one quart), only if patient is conscious. Immediately obtain medical attention.

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**Section 6 –Reactivity & Polymerization**

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Stability: Stable

May react with strong oxidizing agents, such as, chlorates, nitrates, peroxides, etc. Combustion may produce carbon monoxide and other harmful substances.

Hazardous Polymerization: Not Expected.

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**Section 7 – Spill, Leak & Disposal Procedures**

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Steps to be taken in the event of spills, leaks, or release.

Eliminate all potential sources of ignition in vicinity of spill or released vapor. Evacuate the area immediately. Persons entering the contaminated area to correct the problem or to determine whether it is safe to resume normal activities must comply with all instructions in the Protective Measures & Equipment section. Ventilate enclosed areas to prevent formation of flammable or oxygen-deficient atmosphere. Water spray may be used to reduce vapors. Closed systems form white frost at the point of leak. Liquid spills will vaporize forming a cold, dense vapor cloud that does not readily disperse. Avoid vapor cloud even with proper respiratory equipment. If tanks are involved in a fire, direct all non-essential personnel to an area upwind at least ½ mile in all directions. Stop source of release with non-sparking tools before putting out any fire. Tanks involved in fire should be kept cool by keeping a steady flow of water on them.

Waste disposal method.

Releases are expected to cause only localized non-persistent environmental damage. Waste mixtures containing these gases should not be allowed to enter drains or sewers where there is a danger of the vapors becoming ignited. When it becomes necessary to dispose of these gases, it is preferable to do so as a vapor. Unused product may be used as an auxiliary fuel or disposed by burning in properly designed flare or incinerator. Venting of gas to the atmosphere should be avoided. Defective, empty, or partially used portable containers should be returned to the supplier with appropriate tags.

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## Section 8 – Special Protective Measures & Equipment

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### Ventilation:

Local exhaust and general room ventilation may both be essential in work areas to prevent accumulation of explosive mixtures. If mechanical ventilation is used, electrical equipment must meet National Electrical Code requirements.

### Eye Protection:

Use chemical-type goggles and face shields when handling liquefied gases. Safety glasses and/or face shields are recommended when handling high-pressure cylinders and piping systems and whenever vapors are discharged.

### Skin Protection:

Prevent potential skin contact with cold liquid/solid/vapors. Use insulated, impervious plastic or neoprene-coated canvas gloves and protective gear to protect hands and other skin areas.

### Respiratory Protection:

For excessive gas concentrations, use only NIOSH/NSHA- approved self-contained breathing apparatus.

### Work/Hygienic Practices:

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. Personnel should not enter areas where the atmosphere is below 19.5 volume percent oxygen without special procedures/equipment. Respirator use should comply with OSHA 29 CR 1910.134 or equivalent.

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## Section 9 – Special Precautions – Storage & Handling

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Store and use cylinders and tanks in well-ventilated areas, away from heat and sources of ignition.

No smoking near storage or use. Follow standard procedures for handling cylinders, tanks, loading/unloading. See NFPA #58 and API 2510.

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## Section 10 – Shipping Information

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Proper Shipping Name: Propane  
Hazard Class: 2.1  
DOT ID. # UN1978  
DOT Shipping Label: Flammable Gas

Proper Shipping Name: LPG  
Hazard Class: 2.1  
DOT ID #: UN1075  
DOT Shipping Label: Flammable Gas

Acute (immediate) Health Effects: YES  
Chronic (delayed) Health Effects: YES  
Fire Hazard: YES  
Sudden release of Pressure Hazard: YES  
Reactivity Hazard: NO  
Corrosive: NO

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### **Section 11 – State Regulations**

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California Proposition 65: This Product does not contain chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm at levels which would be subject to Proposition 65. Reformulation, use or processing of this product may affect its composition and require re-evaluation.

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### **Section 12 – Disclaimer of Expressed and Implied Warranties**

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This information relates only to the material designed and may not be valid for such material used in combination with any other materials or in any process. Such information is to the best of this company's knowledge believed to be accurate and reliable as of the date indicated. However, no representation, warranty, or guarantee is made as to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for his own particular use.

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### **Section 13 – Safety Training**

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McPhail Fuel Company offers a safety class; training participants in the safe handling and transferring of propane. This course meets Cal-OSHA, NFPA Pamphlet 58 and Title 8 regulatory requirements.