

# Safety Data Sheet

Material Name: Propane

Rev. May 2017

Synonyms: Dimethylmethane, Liquefied Petroleum Gas (LPG), Stenched Propane, Commercial Propane, Refinery Propane, Product Propane (non-odorzied), HD-5 Propane, LP-Gas  
SDS Number 169570

## **Section 1 – Product and Company Identification**

Supplier Information:

SHELBY BOTTLED GAS CORPORATION  
1340 N. MICHIGAN ROAD  
SHELBYVILLE, IN 46176

Phone: (317)398-9550  
Emergency: 1-800-535-5053 (INFOTRAC)  
www.shelbygas.com (Environment, Health, Safety Website)

## **Section 2 – Hazards Identification**

### **GHS Classification:**

Flammable Gas – Category 1  
Gases Under Pressure – Liquefied Gas  
Specific Target Organ Systemic Toxicity (STOT)- Single Exposure Category 2  
May displace oxygen and cause rapid suffocation

### **GHS LABEL ELEMENTS**

#### **SYMBOL(S)**



### **Signal Word**

Danger

### **Hazard Statements**

Extremely flammable gas  
Contains gas under pressure, may explode if heated.  
May cause frostbite.  
May form explosive mixture in air.

### **Precautionary Statements**

#### **Prevention**

Keep away from heat/sparks/open flames/hot surfaces. No smoking.  
Take precautionary measures against static discharge.  
Do not breathe fumes/gas/mist/vapors/spray. May displace oxygen and cause rapid suffocation.

#### **Response**

Leaking gas fire: Do not extinguish, unless leak can be stopped safely. Eliminate all ignition sources if safe to do so.

IF exposed or concerned: Call a POISON CENTER or doctor/physician.

#### **Storage**

Protect from sunlight. Store in a well ventilated place. Store locked up.

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## Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations.

## Section 3 – Composition/Information on Ingredients

CAS#	Component	Percent
74-98-6	Propane	>85
Not Available	Mixed hydrocarbons [butane (C4) and higher]	<10
74-84-0	Ethane	<10
115-07-1	Propylene	<10

Aliphatic hydrocarbons separated from natural gas having carbon numbers in the range of C2 through C4, predominantly C3 (propane and propylene). Propane offered for commercial distribution will be odorized with trace amounts of odorant (typically well below 0.1% ethyl mercaptan).

## Section 4 – First Aid Measures

### First Aid: Eyes

In case of contact with eyes, hold eyelids open to allow liquid to evaporate. Cover eyes to protect from light. Seek immediate medical attention.

### First Aid: Skin

Liquefied gasses may cause cryogenic burns or injury. Treat burned or frostbitten skin by flushing or immersing the affected area(s) in lukewarm water. Do not rub affected area. Do not remove clothing that adheres due to freezing. 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.

### First Aid: Inhalation

Remove person to fresh air. If person is not breathing, provide artificial respiration. If necessary, provide additional oxygen once breathing is restored if trained to do so. Seek medical attention immediately.

### First Aid: Ingestion

Risk of ingestion is extremely low. However, if oral exposure occurs, seek immediate medical assistance.

**Most important symptoms and effects, both acute and delayed:** Light hydrocarbon gasses 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), rapid breathing, cyanosis (bluish discoloration of the skin), numbness of the extremities, unconsciousness, and death.

**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.

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## **Section 5 – Fire Fighting Measures**

### **General Fire Hazards**

See Section 9 for Flammability Properties

Liquid releases flammable vapors at well below ambient temperatures and readily forms a flammable mixture with air. Dangerous fire and explosion hazard when exposed to heat, sparks or flame. Vapors are heavier than air and may travel long distances to a point of ignition and flash back.

### **Hazardous Combustion Products**

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

### **Extinguishing Media**

Use extinguishing media suitable for the surrounding material, preferable or, any extinguisher suitable for Class B fires, dry chemical, firefighting foam, CO<sub>2</sub>, and other gaseous agents. However, fire should not be extinguished unless flow of gas can be immediately stopped.

### **Unsuitable Extinguishing Media**

None

### **Fire Fighting Equipment/Instructions**

Gas fires should not be extinguished unless flow of gas can be immediately stopped. Shut off gas source and allow gas to burn out. If spill or leak has not ignited, determine if water spray may assist in dispersing gas or vapor to protect personnel attempting to stop leak. Use water to cool equipment, surfaces and containers exposed to fire and excessive heat. For large fire the use of unmanned hose holders or monitor nozzles may be advantageous to further minimize personnel exposure. Isolate area, particularly around ends of storage vessels. Let vessel, tank car or container burn unless leak can be

Stopped. Withdraw immediately in the event of a rising sound from a venting safety device. Large fires typically require specially trained personnel and equipment to isolate and extinguish the fire.

Firefighting activities that may result in potential exposure to high heat, smoke or toxic by-products of combustion should require NIOSH-approved pressure-demand self-contained breathing apparatus with full facepiece and full protective clothing.

## **Section 6 - Accidental Release Measures**

### **Recovery and Neutralization**

Stop the source of the release, if safe to do so.

### **Materials and Methods for Clean-Up**

Do not flush down sewer or drainage systems. Do not touch spilled liquid (frostbite/freeze burn hazard!). Consider the use of water spray to disperse vapors. Isolate the area until gas has dispersed. Ventilate and gas test area before entering.

### **Emergency Measures**

Evacuate nonessential personnel and secure all ignition sources. No road flares, smoking or flames in hazard area. Consider wind direction, stay upwind and uphill, if possible. Evaluate the direction of product travel. Vapor cloud may be white, but color will dissipate as cloud disperses fire and explosion hazard is still present!

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## Personal Precautions and Protective Equipment

Do not touch spilled liquid (frostbite/freeze burn hazard!).

## Environmental Precautions

Water spray may be useful in minimizing or dispersing vapors. Do not flush down sewer or drainage systems.

## Prevention of Secondary Hazards

None

## Section 7 – Handling and Storage

### Handling Procedures

Keep away from flame, sparks and excessive temperatures. No smoking. Take precautionary measures against static discharge. Bond and ground containers. Use only in well ventilated areas.

### Storage Procedures

Store only in approved containers. Bond and ground containers. Keep away from flame, sparks, excessive temperatures and open flame. Keep containers closed and clearly labeled. Empty product containers or vessels may contain explosive vapors. Do not pressurize, cut, heat, weld or expose such containers to sources of ignition. 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. Avoid exposing any part of a compressed gas cylinder to temperatures above 125F (51.6C). Gas cylinders should be stored outdoors or in well ventilated storerooms at no lower than ground level and should be quickly removable in an emergency.

### Incompatibilities

Keep away from strong oxidizers, ignition sources and heat. Explosion hazard when exposed to chlorine Dioxide. Heating barium peroxide with propane causes violent exothermic reaction. Heated chlorine Propane mixtures are explosive under some conditions.

## Section 8 - Exposure Controls/Personal Protection

### Component Exposure Limits

#### Propane (200-827-9)

ACGIH: 1000 ppm TWA (listed under Aliphatic hydrocarbon gases: Alkane C1-4)

#### Ethane (200-814-8)

ACGIH: 1000 ppm TWA (listed under Aliphatic hydrocarbon gases; Alkane C1-4)

#### Propylene (204-062-1)

ACGIH: 500 ppm TWA

### Engineering Measures

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

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## Personal Protective Equipment: Respiratory

Use a NIOSH approved positive-pressure, supplied air respirator with escape bottle or self-contained breathing apparatus (SCBA) for gas concentrations above occupational exposure limits, for potential for uncontrolled release, if exposure levels are not known, or in an oxygen deficient atmosphere.

CAUTION: Flammability limits (i.e., explosion hazard) should be considered when assessing the need to expose personnel to concentrations requiring respiratory protection.

A respiratory protection program that meets or is equivalent to OSHA 29 CFR 1910.134 and ANSI Z88.2 should be followed whenever workplace conditions warrant a respirator's use.

## Personal Protective Equipment: Hands

Use cold-impervious, insulating gloves where contact with liquid may occur.

## Personal Protective Equipment: Eyes

Where there is a possibility of liquid contact, wear splash-proof safety goggles and faceshield.

## Personal Protective Equipment: Skin and Body

Where contact with liquid may occur, wear apron and faceshield.

## Section 9 – Physical & Chemical Properties

Appearance:	Colorless	Odor:	Odorless
Physical State:	Gas	pH:	ND
Vapor Pressure:	109.73 psig@70F (21.1 C)	Vapor Density:	1.56 @ 32F (0 C)
Boiling Point:	-43.8 F (-42.1 C)	Melting Point:	ND
Solubility (H <sub>2</sub> O):	slight (62.4 ppm) @ 77F (25 C)	Specific Gravity:	0.531 @32F (0 C)
Evaporation Rate:	ND	VOC:	ND
Octanol/H <sub>2</sub> O Coeff:	ND	Flash Point:	-156F (-104 C)
Flash Point Method:	PMCC	Burning Rate:	ND
Upper Flammability Limit:	9.5	Auto Ignition:	842F (450C)
(UFL):			
Lower Flammability Limit:	2.1		
(LFL):			

## Section 10 – Chemical Stability & Reactivity Information

### Chemical Stability

This is a stable material.

### Hazardous Reaction Potential

Will not occur.

### Conditions to Avoid

Keep away from strong oxidizers, ignition sources and heat.

### Incompatible Products

Explosion hazard when exposed to chlorine dioxide. Heating barium peroxide with propane causes violent exothermic reaction. Heated chlorine-propane mixtures are explosive under some conditions.

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## Hazardous Decomposition Products

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

## **Section 11 – Toxicological Information**

### Acute Toxicity

#### **A: General Product Information**

Propane exhibits some degree of anesthetic action and is mildly irritating to the mucous membranes. At high concentrations propane acts as a simple asphyxiant without other significant physiological effects. High concentrations may cause death due to oxygen depletion.

#### **B. Component Analysis – LD50/LC50**

##### **Propane (74-98-6)**

Inhalation LC50 Rat 658 mg/L 4 h

##### **Ethane (74-84-0)**

Inhalation LC50 Rat 658 mg/L 4 h

##### **Propylene (115-07-1)**

Inhalation LC50 Rat 658 mg/L 4 h

### **Potential Health Effects: Skin Corrosion Property/Stimulativeness**

Vapors are not irritating. Direct contact to skin or mucous membranes with liquefied product or cold vapor may cause freeze burns and frostbite. Contact to mucous membranes with liquefied product may cause frostbite and freeze burns. Signs of frostbite include a change in the color of the skin to gray or white, possibly followed by blistering. Skin may become inflamed and painful.

### **Potential Health Effects: Eye Critical Damage/Stimulativeness**

Vapors are not irritating. However, contact with liquid or cold vapor may cause frostbite, freeze burns, and permanent eye damage.

### **Potential Health Effects: Ingestion**

Ingestion is unlikely. Contact with mucous membranes with liquefied product may cause frostbite and freeze burns.

### **Potential Health Effects: Inhalation**

This product is considered to be non-toxic by inhalation. Inhalation of high concentrations may cause central nervous system depression such as dizziness, drowsiness, headache, and similar narcotic symptoms, but no long-term effects. Numbness, a “chilly” feeling, and vomiting have been reported from accidental exposures to high concentrations. This product is a simple asphyxiant. In high concentrations it will displace oxygen from the breathing atmosphere, particularly in confined spaces. Signs of asphyxiation will be noticed when oxygen is reduced to below 16%, and may occur in several stages. Symptoms may include rapid breathing and pulse rate, headache, dizziness, visual disturbances, mental confusion, incoordination, mood changes, muscular weakness, tremors, cyanosis, narcosis and numbness of the extremities. Unconsciousness leading to central nervous system injury and possibly death will occur when the atmospheric oxygen concentration is reduced to about 6% to 8% or less.

**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.

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## Respiratory Organs Sensitization/Skin Sensitization

This product is not reported to have any skin sensitization effects.

## Generative Cell Mutagenicity

This product is not reported to have any mutagenic effects.

## Carcinogenicity

### A: General Product Information

This product is not reported to have any carcinogenic effects.

### B: Component Carcinogenicity

#### Propylene (115-07-1)

ACGIH: A4-Not Classifiable as a Human Carcinogen

IARC: Monograph 60 [1994]; Supplement 7 [1987] (Group 3 (not classifiable))

## Reproductive Toxicity

This product is not reported to have any reproductive toxicity effects.

## Specified Target Organ General Toxicity: Single Exposure

This product is not reported to have any specific target organ toxicity.

## Specified Target Organ General Toxicity: Repeated Exposure

This product is not reported to have any specific target organ repeat effects.

## Aspiration Respiratory Organs Hazard

This product is not reported to have any aspiration hazard effects.

## Section 12 – Ecological Information

### Ecotoxicity

#### A: General Product Information

Liquid release is only expected to cause localized, non-persistent environmental damage, such as freezing.

Biodegradation of this product may occur in soil and water. Volatilization is expected to be the most important removal process in soil and water. This product is expected to exist entirely in the vapor phase in ambient air.

#### B: Component Analysis-Ecotoxicity-Aquatic Toxicity

No ecotoxicity data are available for this product's components.

### Persistence/Degradability

No information available.

### Bioaccumulation

No information available.

### Mobility in Soil

No information available.

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## Section 13 – Disposal Considerations

### Waste Disposal Instructions

See Section 7 for Handling Procedures. See Section 8 for Person Protective Equipment recommendations.

### Disposal of Contaminated Containers or Packaging

Dispose of contents/container in accordance with local/regional/national/international regulations.

## Section 14 – Transportation Information

### IATA Information

**Shipping Name:** Petroleum Gases, Liquefied

**UN #:** 1075 **Hazard Class:** 2.1

### ICAO Information

**Shipping Name:** Petroleum Gases, Liquefied

**UN #:** 1075 **Hazard Class:** 2.1

### IMDG Information

**Shipping Name:** Petroleum Gases, Liquefied

**UN #:** 1075 **Hazard Class:** 2.1

## Section 15 – Regulatory Information

### Regulatory Information

#### Component Analysis – Inventory

Component/CAS	EC#	CAN	TSCA
Propane 74-98-6	200-827-9	DSL	Yes
Ethane 74-84-0	200-814-8	DSL	Yes
Propylene 115-07-1	204-062-1	DSL	Yes

## Section 16 – Other Information

### Key/Legend

ACGIH=American Conference of Governmental Industrial Hygienists; DOT=Department of Transportation; DSL=Domestic Substances List; HMIS=Hazardous Materials Identification System; IARC=International Agency for Research on Cancer; IMO=International Maritime Organization; IATA=International Air Transport Association; MAK=Maximum Concentration Value in the Workplace; NDSL=Non-Domestic Substances List; NFPA=National Fire Protection Association; NOHSC=National Occupational Health & Safety commission; NTP=National Toxicology Program; STEL=Short-term Exposure Limit; TDG=Transportation of Dangerous Goods; TLV=Threshold Limit Value; TSCA=Toxic Substances Control Act; TWA=Time Weighted Average



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## Literature References

None

## Other Information

Information presented herein has been compiled from sources considered to be dependable, and is accurate and reliable to the best of our knowledge and belief, but is not guaranteed to be so. Since conditions of use are beyond our control, we make no warranties, expressed or implied, except those that may be contained in our written contract of sale or acknowledgment.

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