

## SAFETY DATA SHEET

### 1. Identification

**Product Name:**   
**Product Code:**   
**SDS Date:**

**Address:** BVV  
 1251 Frontenac Rd. Ste 150  
 Naperville IL 60563  
**Phone:** (331) 281-0154

CHEMTEL: (800) 255-3924

### 2. Hazard(s) Identification

**GHS Classification**

Flammable (Category 1) Gases  
 Under Pressure

**Pictogram**



**Signal Word**

**Hazard Statement**

Contains gas under pressure; may explode if heated  
 flammable gas Extremely

**Precautionary**

**Prevention:**  
 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
**Response:**  
 Eliminate all ignition sources if safe to do so.  
 Leaking gas fire: Do not extinguish, unless leak can be stopped safely.  
**Storage:**  
 Protect from sunlight.  
 Store in well-ventilated place.

**Hazards Not Otherwise Classified:**

### 3. Composition/Information On Ingredients

Name	Cas	Concentration
Butane	106-97-8	70%
Propane	74-98-6	30%

Chemical Substance	Chemical Family	Trade Names
Butane	Hydrocarbons, Aliphatic, Saturated	N-BUTANE; LIQUIFIED PETROLEUM GAS; NORMAL BUTANE; BUTYL HYDRIDE; LPG; UN 1011; C4H10

Propane	Hydrocarbons, Aliphatic, Saturated	N-PROPANE; DIMETHYLMETHANE; PROPYL HYDRIDE; R-290; PROPYLHYDRIDE; LIQUEFIED PETROLEUM GAS; LPG; >96% NATURAL GRADE; >99.9% PURE GRADE; UN 1978; C3H8
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## 4. First-aid Measures

<b>If Inhaled:</b>	If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention.
<b>In Case of Skin Contact:</b>	If frostbite or freezing occur, immediately flush with plenty of lukewarm water (105-115°F; 41-46°C). DO NOT USE HOT WATER. If warm water is not available, gently wrap affected parts in blankets. Get immediate medical attention.
<b>In Case of Eye Contact:</b>	Contact with liquid: Immediately flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.
<b>If Swallowed:</b>	If a large amount is swallowed, get medical attention.
<b>Note to Physicians:</b>	For inhalation consider oxygen.

## 5. Fire-fighting Measures

<b>Butane</b>	
<b>Extinguishing Media:</b>	Carbon dioxide, regular dry chemical Large fires: Flood with fine water spray.
<b>Products of Combustion:</b>	Carbon monoxide, carbon dioxide, water and toxic and irritating fumes.
<b>Protection of Firefighters:</b>	Any self-contained breathing apparatus with a full facepiece.
<b>Propane</b>	
<b>Extinguishing Media:</b>	Regular dry chemical, high expansion foam Large fires: Flood with fine water spray.
<b>Products of Combustion:</b>	Carbon monoxide, carbon dioxide, water and toxic and irritating fumes
<b>Protection of Firefighters:</b>	Any self-contained breathing apparatus with a full facepiece.
<b>Isobutane</b>	
<b>Extinguishing Media:</b>	Carbon dioxide, regular dry chemical Large fires: Flood with fine water spray.
<b>Products of Combustion:</b>	Carbon monoxide, carbon dioxide, water and toxic and irritating fumes
<b>Protection of Firefighters:</b>	Any self-contained breathing apparatus with a full facepiece.

### Butane & Propane

HAZARD	NFPA
Health	1
Fire	4
Reactivity	0

### Isobutane:

HAZARD	NFPA
Health	2
Fire	4
Reactivity	0

## 6. Accidental Release Measures

<b>Personal Precautions, Protective Equipment, and Emergency Procedures:</b>	Keep unnecessary people away, isolate hazard area and deny entry. Ventilate closed spaces before entering. Do not touch spilled material.
<b>Environmental Precautions:</b>	Avoid heat, flames, sparks and other sources of ignition.
<b>Methods and Materials for Containment and Clean Up:</b>	

Stop leak if possible without personal risk. Reduce vapors with water spray. Remove sources of ignition. Stop leak, evacuate area. Use protective equipment. Contact emergency personnel. Avoid ignition sources.

## 7. Handling and Storage

**Safe Handling:**

Store and handle in accordance with all current regulations and standards. Grounding and bonding required. Subject to storage regulations: U.S. OSHA 29 CFR 1910.110. Subject to storage regulations: U.S. OSHA 29 CFR 1910.101.

**Safe Storage:**

Grounding and bonding required. Subject to storage regulations: U.S. OSHA 29 CFR 1910.101. Keep separated from incompatible substances.

## 8. Exposure Controls/Personal Protection

Name	CAS
Butane	106-97-8
N-BUTANE: 800 ppm (1900 mg/m <sup>3</sup> ) OSHA TWA (vacated by 58 FR 35338, June 30, 1993) 800 ppm (1900 mg/m <sup>3</sup> ) NIOSH recommended TWA 10 hour(s) LIQUIFIED PETROLEUM GAS (LPG): 1000 ppm (1800 mg/m <sup>3</sup> ) OSHA TWA 1000 ppm (1800 mg/m <sup>3</sup> ) NIOSH recommended TWA 10 hour(s) ALIPHATIC HYDROCARBON GASES ALKANE (C1-C4): 1000 ppm ACGIH TWA	

Name	CAS
Propane	74-98-6
PROPANE: 1000 ppm (1800 mg/m <sup>3</sup> ) OSHA TWA 1000 ppm (1800 mg/m <sup>3</sup> ) NIOSH recommended TWA 10 hour(s) LIQUIFIED PETROLEUM GAS (LPG): 1000 ppm (1800 mg/m <sup>3</sup> ) OSHA TWA 1000 ppm ACGIH TWA 1000 ppm (1800 mg/m <sup>3</sup> ) NIOSH recommended TWA 10 hour(s) ALIPHATIC HYDROCARBON GASES ALKANE (C1-C4): 1000 ppm ACGIH TWA	

**Engineering Control:**

Handle only in fully enclosed systems.

**Eye/Face Protection:**

For the gas: Eye protection not required, but recommended. For the liquid: Wear splash resistant safety goggles. Contact lenses should not be worn. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

**Skin Protection:**

For the gas: Protective clothing is not required. For the liquid: Wear appropriate protective, cold insulating clothing.

**Respiratory Protection:**

Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply.

## 9. Physical and Chemical Properties

<b>Appearance:</b>	Butane	Colorless
<b>Odor:</b>	Butane	Faint petroleum-like odor
<b>Odor Threshold:</b>	Butane	6.16 ppm
<b>pH:</b>	Butane	Not Applicable
<b>Melting/Freezing Point:</b>	Butane	-216 F (-138 C)
<b>Initial Boiling Point/Range:</b>	Butane	30°F (-1°C)
<b>Flash Point:</b>	Butane	-76 F (-60 C)(CC)
<b>Evaporation Rate:</b>	Butane	Not applicable for gas. Liquefied n-butane will evaporate rapidly at room temperature.
<b>Flammability:</b>	Butane	Not Available
<b>Upper Explosion Limit:</b>	Butane	0.085
<b>Lower Explosion Limit:</b>	Butane	0.019

<b>Vapor Pressure:</b>	Butane	1557 mmHg @ 20°C
<b>Vapor Density:</b>	Butane	2.1 (Air=1)
<b>Specific Gravity:</b>	Butane	0.5788 @ 0°C
<b>Water Solubility:</b>	Butane	0.15
<b>Partition Coefficient:</b>	Butane	630.96 (log = 2.80) (estimated from water solubility)
<b>Auto Ignition Temp:</b>	Butane	549°F (287°C)
<b>Viscosity:</b>	Butane	Not Available
<b>Molecular Weight:</b>	Butane	58.12
<b>Molecular Formula:</b>	Butane	C-H3-(C-H2)2-C-H3
<b>Density:</b>	Butane	Not Available
<b>Weight per Gallon:</b>	Butane	Not Available
<b>Volatility by Volume:</b>	Butane	100%
<b>Volatility</b>	Butane	Not Applicable
<b>Solvent Solubility:</b>	Butane	Soluble: Alcohol, ether, chloroform
<b>Appearance:</b>	Propane	Clear
<b>Odor:</b>	Propane	Gasoline odor
<b>Odor Threshold:</b>	Propane	5000-20000 ppm
<b>pH:</b>	Propane	Not Applicable
<b>Melting/Freezing Point:</b>	Propane	-310°F (-190°C)
<b>Initial Boiling Point/Range:</b>	Propane	-40°F (-40°C)
<b>Flash Point:</b>	Propane	-157 F (-105 C)
<b>Evaporation Rate:</b>	Propane	Not Applicable
<b>Flammability:</b>	Propane	Not Available
<b>Upper Explosion Limit:</b>	Propane	0.095
<b>Lower Explosion Limit:</b>	Propane	0.021
<b>Vapor Pressure:</b>	Propane	6398 mmHg @ 21.1°C
<b>Specific Gravity:</b>	Propane	
<b>Vapor Density:</b>	Propane	1.55 (Air=1)
<b>Water Solubility:</b>	Propane	Very slightly soluble
<b>Partition Coefficient:</b>	Propane	Not Available
<b>Auto Ignition Temp:</b>	Propane	842°F (450°C)
<b>Volatility by Volume:</b>	Propane	Not Available
<b>Viscosity:</b>	Propane	Not Available
<b>Molecular Weight:</b>	Propane	44.11
<b>Molecular Formula:</b>	Propane	C-H3-C-H2-C-H3
<b>Density:</b>	Propane	0.116
<b>Weight per Gallon:</b>	Propane	Not Available
<b>Volatility by Volume:</b>	Propane	Not Available
<b>Volatility</b>	Propane	Not Applicable
<b>Solvent Solubility:</b>	Propane	Soluble: Absolute alcohol, ether, chloroform, benzene, turpentine

## 10. Stability and Reactivity

<b>Chemical Stability:</b>	Stable at normal temperatures and pressure.
<b>Possibility of Hazardous Reactions:</b>	Will not polymerize.
<b>Conditions to Avoid:</b>	Stable at normal temperatures and pressure.
<b>Incompatible Materials:</b>	Oxidizing materials, combustible materials, halogen compounds,
<b>Hazardous Decomposition Products:</b>	Oxides of carbon.

## 11. Toxicological Information

<b>Name:</b> Butane	<b>CAS:</b> 106-97-8
LC(50): 658 mg/l (270,000 ppm) butane (4 hour-rat)	
Dermal LD50: Not Established	
<b>Skin Corrosion/Irritation:</b>	Blisters, frostbite
<b>Serious Eye Damage/Eye Irritation:</b>	Frostbite, blurred vision
<b>Respiratory or Skin Sensitization:</b>	Central nervous system depression, difficulty breathing
<b>Mutagenicity:</b>	Not Established
<b>Carcinogenicity:</b>	None
<b>Reproductive:</b>	Not Established
<b>Inhalation:</b>	Irritation, nausea, vomiting, headache, drowsiness, symptoms of drunkenness, tingling sensation, suffocation, convulsions, coma, can displace oxygen at high concentrations
<b>Name:</b> Propane	<b>CAS:</b> 74-98-6
LC50 Inhalation Gas. Rat > 800000 ppm 15 minutes	
Dermal LD50: Not Available	
<b>Skin Corrosion/Irritation:</b>	Liquid: Blisters, frostbite
<b>Serious Eye Damage/Eye Irritation:</b>	Liquid: frostbite, blurred vision
<b>Respiratory or Skin Sensitization:</b>	Central nervous system depression, difficulty breathing
<b>Mutagenicity:</b>	Not Available
<b>Carcinogenicity:</b>	Not Available
<b>Reproductive:</b>	Not Available
<b>Inhalation:</b>	Nausea, vomiting, irregular heartbeat, headache, symptoms of drunkenness, disorientation, suffocation, convulsions, coma

## 12. Ecological Information

Name	CAS	Toxicity
Butane	106-97-8	Fish toxicity: Not available Invertebrate toxicity: Not available Algal toxicity: Not available Phyto toxicity: Not available Other toxicity: Expected to exist entirely in the vapor phase in ambient air.
Propane	74-98-6	Fish toxicity: Not available Invertebrate toxicity: Not available Algal toxicity: Not available Phyto toxicity: Not available Other toxicity: Not available

## 13. Disposal Considerations

Dispose in accordance with all applicable regulations. Subject to disposal regulations: U.S. EPA 40 CFR 262. Hazardous Waste Number(s): D001.

## 14. Transportation Information

Proper Shipping Name:	Hydrocarbon gas mixture, compressed, n.o.s.
Hazard Class	2.1
Identification Number:	UN1964
Packing Group:	II
Label	FLAMMABLE GAS
Ship:	UN1964 HYDROCARBON GAS MIXTURE, COMPRESSED, N.O.S. CLASS 2.1 PG II

## 15. Regulatory Information

Name	CAS
SARA 355.30/355.40	Not regulated.
SARA 370.21	Not regulated.
CERCLA	Not regulated.
SARA 372.65	Not regulated.
PROP 65	Not regulated.
OSHA Process Safety	Not regulated.
Canadian WHMIS Class	A, B1

## 16. Other Information, Including Date of Preparation or Last Revision

SDS Date:

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