

## SECTION 1: IDENTIFICATION

### 1.1. Product Identifier

**Product Form:** Mixture  
**Product Name:** Custom LPG Mix

### 1.2. Intended Use of the Product

**Use of the Substance/Mixture:** No use is specified.

### 1.3. Name, Address, and Telephone of the Responsible Party

**Company**  
 High Precision Gas LLC  
 10770 Painter Avenue  
 Santa Fe Springs, CA 90670  
 714-868-6525  
[www.highprecisiongas.com](http://www.highprecisiongas.com)

### 1.4. Emergency Telephone Number

**Emergency Number** : Professional Emergency Resource Services (PERS)  
 (800) 633-8253 24 / 7 / 365

## SECTION 2: HAZARDS IDENTIFICATION

### 2.1. Classification of the Substance or Mixture

Simple Asphy  
 Flam. Gas 1 H220  
 Press. Gas (Liq.) H280  
 Full text of hazard classes and H-statements : see section 16

### 2.2. Label Elements

#### GHS-US Labeling

#### Hazard Pictograms (GHS-US)



#### Signal Word (GHS-US)

: Danger

#### Hazard Statements (GHS-US)

: H220 - Extremely flammable gas.  
 H280 - Contains gas under pressure; may explode if heated.  
 May displace oxygen and cause rapid suffocation.

#### Precautionary Statements (GHS-US)

: P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
 P377 - Leaking gas fire: Do not extinguish, unless leak can be stopped safely.  
 P381 - Eliminate all ignition sources if safe to do so.  
 P403 - Store in a well-ventilated place.  
 P410+P403 - Protect from sunlight. Store in a well-ventilated place.

### 2.3. Other Hazards

Exposure may aggravate those with pre-existing eye, skin, or respiratory conditions. May cause damage to the blood, central nervous system, and cardiovascular system. High concentrations of gas can cause unconsciousness and death. Being under the influence of alcohol may enhance the effects of this product.

### 2.4. Unknown Acute Toxicity (GHS-US)

No data available

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1. Substance

Not applicable

### 3.2. Mixture

Name	Synonyms	Product Identifier	%	GHS US classification
Butane	n-Butane / BUTANE	(CAS-No.) 106-97-8	10 - 90	Simple Asphy Flam. Gas 1, H220 Press. Gas (Liq.), H280

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Propane	Normal propane / PROPANE / n-Propane	(CAS-No.) 74-98-6	10 - 90	Simple Asphy Flam. Gas 1, H220 Press. Gas (Liq.), H280
Isobutane	2-Methylpropane / Propane, 2-methyl- / ISOBUTANE / Butane / Butane, isomer	(CAS-No.) 75-28-5	10 - 90	Simple Asphy Flam. Gas 1, H220 Press. Gas (Liq.), H280

Full text of H-phrases: see section 16

### SECTION 4: FIRST AID MEASURES

#### 4.1. Description of First-aid Measures

**First-aid Measures General:** Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible). If frostbite or freezing occurs, immediately flush with plenty of lukewarm water to GENTLY warm the affected area. Do not use hot water. Do not rub affected area. Get immediate medical attention.

**First-aid Measures After Inhalation:** Obtain medical attention if breathing difficulty persists. First, take proper precautions to ensure your own safety before attempting rescue (e.g. wear appropriate respiratory protective equipment, use the buddy system), then remove the exposed person to fresh air. Keep at rest in a position comfortable for breathing.

**First-aid Measures After Skin Contact:** Remove contaminated clothing. Drench affected area with water for at least 5 minutes. Obtain medical attention if irritation develops or persists. For brief contact with a small amount: Rewarm with body heat. Get immediate medical advice/attention. For extensive contact or a large amount: Immediately call a poison center/doctor and follow their advice. Specific treatment is urgent, incorrect first-aid practices will aggravate the injury. Protect affected area with a loose cover until proper medical treatment is received.

**First-aid Measures After Eye Contact:** Rinse cautiously with water for at least 5 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention if irritation develops or persists.

**First-aid Measures After Ingestion:** Rinse mouth. Do NOT induce vomiting. Obtain medical attention.

#### 4.2. Most Important Symptoms and Effects Both Acute and Delayed

**Symptoms/Injuries:** Asphyxia by lack of oxygen: risk of death. May cause frostbite on contact with the liquid.

**Symptoms/Injuries After Inhalation:** In elevated concentrations may cause asphyxiation, central nervous system effects, and increased breathing rate. Symptoms of asphyxiation include headache, dizziness, rapid breathing, increased pulse, mood changes, tremors, cyanosis, muscular weakness, narcosis, numbness of the extremities, unconsciousness and death.

**Symptoms/Injuries After Skin Contact:** Contact with gas/liquid escaping the container can cause frostbite and freeze burns.

**Symptoms/Injuries After Eye Contact:** Contact with gas/liquid escaping the container can cause frostbite, freeze burns, and permanent eye damage.

**Symptoms/Injuries After Ingestion:** Not considered a potential route of exposure, but contact with gas/liquid escaping the container can cause freeze burns and frostbite.

**Chronic Symptoms:** None expected under normal conditions of use.

#### 4.3. Indication of Any Immediate Medical Attention and Special Treatment Needed

If exposed or concerned, get medical advice and attention. If medical advice is needed, have product container or label at hand.

### SECTION 5: FIRE-FIGHTING MEASURES

#### 5.1. Extinguishing Media

**Suitable Extinguishing Media:** Do not extinguish burning gas if flow cannot be shut off immediately. Extinguish secondary FIRES with appropriate materials.

**Unsuitable Extinguishing Media:** Do not use a heavy water stream. Use of heavy stream of water may spread fire.

#### 5.2. Special Hazards Arising From the Substance or Mixture

**Fire Hazard:** Extremely flammable gas. The gas is heavier than air and may travel along the ground; distant ignition possible.

**Explosion Hazard:** May form flammable/explosive vapor-air mixture. Container may explode in heat of fire.

**Reactivity:** Hazardous reactions will not occur under normal conditions.

#### 5.3. Advice for Firefighters

**Precautionary Measures Fire:** Exercise caution when fighting any chemical fire.

**Firefighting Instructions:** Use water spray or fog for cooling exposed containers. Leaking gas fire: Do not extinguish, unless leak can be stopped safely. Eliminate all ignition sources if safe to do so. Fight fire remotely due to the risk of explosion.

**Protection During Firefighting:** Do not enter fire area without proper protective equipment, including respiratory protection.

**Hazardous Combustion Products:** Carbon oxides (CO, CO<sub>2</sub>).

**Other Information:** Use water spray to disperse vapors.

### SECTION 6: ACCIDENTAL RELEASE MEASURES

#### 6.1. Personal Precautions, Protective Equipment and Emergency Procedures

**General Measures:** Eliminate every possible source of ignition. Do not breathe gas.

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## 6.1.1. For Non-Emergency Personnel

**Protective Equipment:** Use appropriate personal protective equipment (PPE).

**Emergency Procedures:** Evacuate unnecessary personnel.

## 6.1.2. For Emergency Personnel

**Protective Equipment:** Equip cleanup crew with proper protection.

**Emergency Procedures:** Upon arrival at the scene, a first responder is expected to recognize the presence of dangerous goods, protect oneself and the public, secure the area, and call for the assistance of trained personnel as soon as conditions permit.

Evacuate unnecessary personnel, isolate, and ventilate area.

## 6.2. Environmental Precautions

Prevent entry to sewers and public waters.

## 6.3. Methods and Materials for Containment and Cleaning Up

**For Containment:** Stop leak, if possible without risk. As an immediate precautionary measure, isolate spill or leak area in all directions.

**Methods for Cleaning Up:** Clean up spills immediately and dispose of waste safely. Stop the source of the release, if safe to do so. Consider the use of water spray to disperse vapors. Isolate the area until gas has dispersed. Ventilate and gas test area before entering. Contact competent authorities after a spill.

## 6.4. Reference to Other Sections

See Section 8 for exposure controls and personal protection and Section 13 for disposal considerations.

## SECTION 7: HANDLING AND STORAGE

### 7.1. Precautions for Safe Handling

**Additional Hazards When Processed:** Asphyxiating gas at high concentrations. Do not pressurize, cut, or weld containers. Ruptured cylinders may rocket. Handle empty containers with care because residual vapors are flammable.

**Precautions for Safe Handling:** Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Avoid prolonged contact with eyes, skin and clothing. Do not breathe gas.

**Hygiene Measures:** Handle in accordance with good industrial hygiene and safety procedures.

### 7.2. Conditions for Safe Storage, Including Any Incompatibilities

**Technical Measures:** Comply with applicable regulations. Proper grounding procedures to avoid static electricity should be followed.

**Storage Conditions:** Cylinders should be stored upright with valve protection cap in place and firmly secured to prevent falling. Keep container closed when not in use. Store in a dry, cool place. Keep/Store away from direct sunlight, extremely high or low temperatures and incompatible materials. Keep in fireproof place.

**Incompatible Materials:** Strong oxidizers. Chlorine. Oxygen. Nickel carbonyl.

### 7.3. Specific End Use(s)

No use is specified.

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1. Control Parameters

For substances listed in section 3 that are not listed here, there are no established exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), AIHA (WEEL), NIOSH (REL), or OSHA (PEL).

Butane (106-97-8)		
USA ACGIH	ACGIH STEL (ppm)	1000 ppm (explosion hazard (Butane, isomers))
USA NIOSH	NIOSH REL (TWA) (mg/m <sup>3</sup> )	1900 mg/m <sup>3</sup>
USA NIOSH	NIOSH REL (TWA) (ppm)	800 ppm
USA IDLH	US IDLH (ppm)	1600 ppm (>10% LEL)
Propane (74-98-6)		
USA NIOSH	NIOSH REL (TWA) (mg/m <sup>3</sup> )	1800 mg/m <sup>3</sup>
USA NIOSH	NIOSH REL (TWA) (ppm)	1000 ppm
USA IDLH	US IDLH (ppm)	2100 ppm (10% LEL)
USA OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	1800 mg/m <sup>3</sup>
USA OSHA	OSHA PEL (TWA) (ppm)	1000 ppm
Isobutane (75-28-5)		
USA ACGIH	ACGIH STEL (ppm)	1000 ppm (explosion hazard (Butane, isomers))
USA NIOSH	NIOSH REL (TWA) (mg/m <sup>3</sup> )	1900 mg/m <sup>3</sup>
USA NIOSH	NIOSH REL (TWA) (ppm)	800 ppm

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## 8.2. Exposure Controls

### Appropriate Engineering Controls

: Suitable eye/body wash equipment should be available in the vicinity of any potential exposure. Ensure adequate ventilation, especially in confined areas. Ensure all national/local regulations are observed. Use explosion-proof equipment. Proper grounding procedures to avoid static electricity should be followed. Gas detectors should be used when flammable gases or vapors may be released. Oxygen detectors should be used when asphyxiating gases may be released.

### Personal Protective Equipment

: Gloves. Protective clothing. Protective goggles. Insufficient ventilation: wear respiratory protection. Respiratory protection of the dependent type.



### Materials for Protective Clothing

: Chemically resistant materials and fabrics. Wear fire/flammable resistant/retardant clothing.

### Hand Protection

: Wear protective gloves. If material is cold, wear thermally resistant protective gloves.

### Eye and Face Protection

: Chemical safety goggles.

### Skin and Body Protection

: Wear suitable protective clothing.

### Respiratory Protection

: Use a NIOSH-approved self-contained breathing apparatus whenever exposure may exceed established Occupational Exposure Limits.

### Thermal Hazard Protection

: Wear thermally resistant protective clothing.

### Other Information

: When using, do not eat, drink or smoke.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1. Information on Basic Physical and Chemical Properties

Physical State	: Gas
Appearance	: Colorless
Odor	: Colorless (Butane) Poor warning properties at low concentrations. Stenchant often added. Sweetish. (Propane)
Odor Threshold	: 5000 mg/m <sup>3</sup> (Butane)
pH	: No data available
Evaporation Rate	: No data available
Melting Point	: -138 °C (Butane) (-216.4 °F)
Freezing Point	: -187.69 °C (Propane) (-305.84 °F)
Boiling Point	: -0.5 °C (Butane) -42.1 °C (-44.32 °F) (Propane) (31.1 °F)
Flash Point	: -60 °C TCC (Butane) -104.4 °C (-155.2 °F) TCC (Propane) (-76 °F)
Critical Temperature	: 152.4 °C (Butane) 96.8 °C (206 °F) (Propane) (306.32 °F)
Auto-ignition Temperature	: 400 °C (Butane) 450 °C (842 °F) (Propane) (752 °F)
Decomposition Temperature	: No data available
Flammability (solid, gas)	: Extremely flammable gas
Vapor Pressure	: 200 kPa (Butane) 8.58 bar (109.73 psig) (Propane)
Relative Vapor Density at 20°C	: No data available
Relative Density	: 0.6 (Butane) 0.58 (Propane)
Density	: 0.573 g/cm <sup>3</sup> (at 25 °C) (Butane) 0.506 - 0.583 g/cm <sup>3</sup> (at 15 °C) (Propane)
Solubility	: Water: 88 mg/l (Butane) 75 mg/l (Propane)
Partition Coefficient: N-Octanol/Water	: 2.89 (Butane) 2.36 (Propane)
Viscosity	: No data available
Explosive Properties	: Contains gas under pressure; may explode if heated.
Lower Flammable Limit	: 1.4 % (Butane) 2.1% (Propane)
Upper Flammable Limit	: 9.4 % (Butane) 9.5% (Propane)
Molecular Mass	: 58 g/mol (Butane) 44 g/mol (Propane)
Relative Gas Density	: 2.1 (Butane) 1.5 (Propane)

### 9.2. Other Information

Gas Group : Press. Gas (Liq.)

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## SECTION 10: STABILITY AND REACTIVITY

- 10.1. Reactivity:** Hazardous reactions will not occur under normal conditions.
- 10.2. Chemical Stability:** Contains gas under pressure; may explode if heated.
- 10.3. Possibility of Hazardous Reactions:** Hazardous polymerization will not occur.
- 10.4. Conditions to Avoid:** Direct sunlight, extremely high or low temperatures, open flames, sources of ignition and incompatible materials.
- 10.5. Incompatible Materials:** Strong oxidizers. Chlorine. Oxygen. Nickel carbonyl.
- 10.6. Hazardous Decomposition Products:** None expected under normal conditions of use.

## SECTION 11: TOXICOLOGICAL INFORMATION

### 11.1. Information on Toxicological Effects

**Acute Toxicity:** Not classified

Butane (106-97-8)	
LC50 Inhalation Rat	30957 mg/m <sup>3</sup> (Exposure time: 4 h)
ATE (Vapors)	30,957.00 mg/l/4h
ATE (Dust/Mist)	30,957.00 mg/l/4h
Propane (74-98-6)	
LC50 Inhalation Rat	> 800000 ppm (Exposure time: 15 min)
Isobutane (75-28-5)	
LC50 Inhalation Rat	658 mg/l/4h
LC50 Inhalation Rat	11000 ppm
ATE (Vapors)	658.00 mg/l/4h
ATE (Dust/Mist)	658.00 mg/l/4h

**Skin Corrosion/Irritation:** Not classified

**Serious Eye Damage/Irritation:** Not classified

**Respiratory or Skin Sensitization:** Not classified

**Germ Cell Mutagenicity:** Not classified

**Carcinogenicity:** Not classified

**Reproductive Toxicity:** Not classified

**Specific Target Organ Toxicity (Single Exposure):** Not classified

**Specific Target Organ Toxicity (Repeated Exposure):** Not classified

**Aspiration Hazard:** Not classified

**Symptoms/Injuries After Inhalation:** In elevated concentrations may cause asphyxiation, central nervous system effects, and increased breathing rate. Symptoms of asphyxiation include headache, dizziness, rapid breathing, increased pulse, mood changes, tremors, cyanosis, muscular weakness, narcosis, numbness of the extremities, unconsciousness and death.

**Symptoms/Injuries After Skin Contact:** Contact with gas/liquid escaping the container can cause frostbite and freeze burns.

**Symptoms/Injuries After Eye Contact:** Contact with gas/liquid escaping the container can cause frostbite, freeze burns, and permanent eye damage.

**Symptoms/Injuries After Ingestion:** Not considered a potential route of exposure, but contact with gas/liquid escaping the container can cause freeze burns and frostbite.

**Chronic Symptoms:** None expected under normal conditions of use.

## SECTION 12: ECOLOGICAL INFORMATION

### 12.1. Toxicity

**Ecology - General** : Not classified.

### 12.2. Persistence and Degradability

Custom LPG Mix	
Persistence and Degradability	Not established.

### 12.3. Bioaccumulative Potential

Custom LPG Mix	
Bioaccumulative Potential	Not established.

Butane (106-97-8)	
Log Pow	2.89

Propane (74-98-6)	
Log Pow	2.3

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<b>Isobutane (75-28-5)</b>	
<b>BCF Fish 1</b>	1.57 - 1.97
<b>Log Pow</b>	2.88 (at 20 °C)

**12.4. Mobility in Soil** No additional information available

**12.5. Other Adverse Effects**

**Other Information** : Avoid release to the environment.

## SECTION 13: DISPOSAL CONSIDERATIONS

**13.1. Waste Treatment Methods**

**Waste Disposal Recommendations:** Dispose of contents/container in accordance with local, regional, national, and international regulations.

**Additional Information:** Handle empty containers with care because residual vapors are flammable. Empty gas cylinders should be returned to the vendor for recycling or refilling. Do not puncture or incinerate container.

**Ecology - Waste Materials:** Avoid release to the environment.

## SECTION 14: TRANSPORT INFORMATION

The shipping description(s) stated herein were prepared in accordance with certain assumptions at the time the SDS was authored, and can vary based on a number of variables that may or may not have been known at the time the SDS was issued.

**14.1. In Accordance with DOT**

**Proper Shipping Name** : PETROLEUM GASES, LIQUEFIED (Propane, Butane, Isobutane)

**Hazard Class** : 2.1

**Identification Number** : UN1075

**Label Codes** : 2.1

**ERG Number** : 115



**14.2. In Accordance with IMDG**

**Proper Shipping Name** : PETROLEUM GASES, LIQUEFIED (Propane, Butane, Isobutane)

**Hazard Class** : 2

**Division** : 2.1

**Identification Number** : UN1075

**Label Codes** : 2.1

**EmS-No. (Fire)** : F-D

**EmS-No. (Spillage)** : S-U



**14.3. In Accordance with IATA**

**Proper Shipping Name** : PETROLEUM GASES, LIQUEFIED (Propane, Butane, Isobutane)

**Identification Number** : UN1075

**Hazard Class** : 2

**Label Codes** : 2.1

**Division** : 2.1

**ERG Code (IATA)** : 10L



## SECTION 15: REGULATORY INFORMATION

**15.1. US Federal Regulations**

<b>Custom LPG Mix</b>	
<b>SARA Section 311/312 Hazard Classes</b>	Physical hazard - Flammable (gases, aerosols, liquids, or solids) Physical hazard - Gas under pressure Health hazard - Simple asphyxiant

**Butane (106-97-8)**

Listed on the United States TSCA (Toxic Substances Control Act) inventory

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

Listed on the United States TSCA (Toxic Substances Control Act) inventory

**Isobutane (75-28-5)**

Listed on the United States TSCA (Toxic Substances Control Act) inventory

**15.2. US State Regulations**

<b>Butane (106-97-8)</b>
U.S. - Massachusetts - Right To Know List

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U.S. - New Jersey - Right to Know Hazardous Substance List

U.S. - Pennsylvania - RTK (Right to Know) List

### Propane (74-98-6)

U.S. - Massachusetts - Right To Know List

U.S. - New Jersey - Right to Know Hazardous Substance List

U.S. - Pennsylvania - RTK (Right to Know) List

### Isobutane (75-28-5)

U.S. - Massachusetts - Right To Know List

U.S. - New Jersey - Right to Know Hazardous Substance List

U.S. - Pennsylvania - RTK (Right to Know) List

## SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

**Date of Preparation or Latest Revision** : 03/25/2019

**Other Information** : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200

### GHS Full Text Phrases:

Flam. Gas 1	Flammable gases Category 1
Press. Gas (Liq.)	Gases under pressure Liquefied gas
Simple Asphy	Simple Asphyxiant
H220	Extremely flammable gas
H280	Contains gas under pressure; may explode if heated

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.*

SDS US (GHS HazCom)