



# Safety Data Sheet

## 1. Identification

**Product Name:** Butane  
**Synonyms:** Liquefied Petroleum Gas, C<sub>4</sub>H<sub>10</sub>  
**Chemical Family:** Alkane  
**Manufacturers Name:** Whiting Oil and Gas Corporation  
**Address:** 1700 Broadway, Suite 2300  
Denver, Colorado 80290  
**Product Use:** Hydrocarbon fuel  
**Phone Number for Information:** (303) 837-1661  
**Emergency Phone Number:** (800) 424-9300 (Chemtrec)

Butane is a four-carbon alkane, normally a gas, but compressible to a transportable liquid. A by-product of natural gas processing and petroleum refining, it is commonly used as a fuel for engines, cooking, and lighters. It is also used as a propellant in aerosol spray cans.

## 2. Hazard Identification

Butane is a colorless gas having no odor. It is extremely flammable and explosive. Keep away from heat, sparks, and open flame. At high concentrations this product acts as a simple asphyxiant.

Large pressure drops in a butane process could result in temperatures low enough to cause frost bite.

**DANGER!**  
**FLAMMABLE LIQUEFIED GAS**

LIQUEFIED GAS UNDER PRESSURE. MAY EXPLODE IF HEATED. PRODUCES SKIN IRRITATION UPON PROLONGED OR REPEATED SKIN CONTACT. MAY CONTAIN TRACE AMOUNTS OF BENZENE WHICH CAN CAUSE CANCER OR BE TOXIC TO BLOOD-FORMING ORGANS. MAY BECOME ASPHYXIANIT IF RELEASED. UPON SUDDEN RELEASE OF PRESSURE, CAN CAUSE FROSTBITE WHEN IN CONTACT WITH SKIN.

**NO SMOKING!**  
**KEEP AWAY FROM HEAT/SPARKS/OPEN FLAMES/HOT SURFACES. WEAR PROTECTIVE GLOVES, CLOTHING AND EYE WEAR WHEN HANDLING.**

### Globally Harmonized System (GHS) Information

#### Physical Hazards Classification

Flammable Gas, Category 1  
Gas Under Pressure, Liquefied gas

### Health Hazards Classification


Acute Toxicity, Category 2

Serious eye damage/eye irritation, Category 2a

Specific Target organ toxicity, Category 1 (central nervous system, cardiovascular system, respiratory system)

### Environmental Hazards Classification

None

GHS Label Information	
	
<b>Symbols:</b>	
<b>Signal Word: Danger</b>	
<b>Hazard Statements:</b>	<b>Precautionary Statements:</b>
<b>Physical Hazards</b> Extremely flammable gas Contains gas under pressure, may explode if heated	<b>Prevention</b> Keep away from heat/sparks/open flames/hot surfaces Do not breathe gas Do not eat, drink or smoke when using this product Use only outdoors or in a well-ventilated area Avoid release to the environment Wear protective gloves/protective clothing/face protection Wear respiratory protection
<b>Health Hazards</b> Causes serious eye irritation Causes damage to central nervous system, cardiovascular system, respiratory system	<b>Response</b> IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call for assistance IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call for assistance. LEAKING GAS FIRE: Do not extinguish, unless leak can be stopped safely. If safe, eliminate ignition sources.
<b>Environmental Hazards</b> None	<b>Storage</b> Store locked up Protect from sunlight. Store in a well-ventilated place <b>Disposal</b> <ul style="list-style-type: none"><li>Dispose of contents/container in accordance with local/regional/national/international regulations</li></ul>

## 3. Composition/Information on Ingredients

<u>COMPOSITION</u>	<u>CAS NUMBER</u>	<u>PERCENT</u>
n-Butane	106-97-8	70 to 80%
isobutane	75-28-5	20 to 30%
Propane	74-98-6	0 to 3%
Pentanes	109-66-0	0 to 2%

## 4. First Aid Measures

### Eye Contact

Contact with liquid can cause freezing of tissue. Gently flush eyes with lukewarm water. Seek medical attention.

### Skin Contact

In the event of frostbite, gently warm the affected area – do not rub. Seek medical attention.

### Inhalation

Remove victim to fresh air and provide oxygen if breathing labored, shallow, or difficult. Rescuer must wear appropriate supplied air respirator to remove worker from contaminated area to fresh air. Give artificial respiration if victim is not breathing. Seek medical attention immediately.

### Ingestion

Not applicable

## 5. Fire-Fighting Measures

### Extinguishing Media

Use dry chemical or carbon dioxide with water spray or fog for surrounding area.

### Special Fire Fighting Procedures and Precautions

Evacuate all unnecessary personnel from the area. Allow only properly trained and protected emergency response personnel in area. A NIOSH approved self-contained breathing apparatus may be required. If gas flow cannot be shut off, do not attempt to extinguish fire. Allow fire to burn itself out. Use high volume water supply to cool exposed pressure containers and nearby equipment. Approach a flame enveloped container from the sides, never from the ends. Use extreme caution when applying water to a container that has been exposed to heat or flame for more than a short time. For uncontrollable fires and/or when flame is impinging on a container, withdraw all personnel and evacuate vicinity immediately.

### Unusual Fire Explosion Hazards

Butane is heavier than air and can collect in low areas. Flash back along a vapor trail is possible. Pressure in a container can build up due to heat and container may rupture (bleve) suddenly and violently without warning if pressure relief devices fail to function properly. Withdraw immediately if flames are impinging on a container and; there is an audible rising sound, if venting increases in volume or intensity, if there is discoloration of the container due to fire. Butane released from a properly functioning relief valve on an overheated container can also become ignited.

**Hazardous Combustion Products:** None

### NFPA Ratings

Health – 1

Flammability – 4

Reactivity – 0

Other – 0

Key: Least-0; Slight-1; Moderate-2; High-3; Extreme-4

## 6. Accidental Release Measures

Keep the public away. Isolate and evacuate the area. Stop leak if safe to do so and eliminate all ignition sources. Allow gas to dissipate and ventilate low lying or closed areas to reduce the danger of explosion. Wear appropriate respirator and protective clothing.

## 7. Handling and Storage

Store in a safe and pre-authorized location (outside, detached storage is preferred) with adequate ventilation. Specific requirements are listed in NFPA 58, LP-GAS CODE. Isolate from heat and ignition sources. Containers should never be allowed to reach temperature exceeding 125°F (52°C). Isolate from combustible materials.

Keep away from heat, sparks or flame. Extinguish pilot lights, cigarettes and turn off other sources of ignition prior to use and until all gas is gone. Containers, even those that have been emptied, can contain explosive vapors. Do not puncture, cut, drill, grind, weld or perform similar operations on or near containers.

## 8. Exposure Controls/Personal Protection

### Occupational Exposure Limits

<u>COMPONENT</u>	<u>OSHA PEL</u>	<u>ACGIH TLV TWA</u>
Butane s	None	1000 ppm*
Propane	1000 ppm	1000 ppm*
Pentanes	1000 ppm	600 ppm

Notes:

\* Aliphatic Hydrocarbon Gas (Alkane C1-C4)

### Engineering Controls

Maintain air concentrations below flammable limits and occupational exposure standards for chemical components by using ventilation and other engineering controls.

### Personal Protective Equipment

#### Eye/Face Protection

Splash Goggles or safety glasses with face shield should be used when handling compressed gasses.

#### Skin Protection

Wear insulated gloves to protect from frostbite if appropriate.

#### Respiratory Protection

NIOSH-approved supplied air respirators should be used when concentrations exceed published occupational exposure limits. A self-contained breathing apparatus (SCBA) or airline unit with a full face-piece operated in a positive pressure mode is required when entering oxygen deficient atmospheres.

## 9. Physical and Chemical Properties

**Appearance and Odor:** Colorless gas with no odor.

**pH:** not applicable

**Melting Point/freezing point:** -217°F  
**Boiling Point:** 31°F  
**Flash Point and Method:** -76°F / closed cup  
**Evaporation Rate:** not applicable  
**Flammable Limits:** (approximate % Volume in air) Lower: 1.9 Upper: 8.5  
**Vapor Pressure:** at room temperature = 35 psig  
**Specific Gravity:** 0.6 (water=1)  
**Vapor Density:** 2 (air=1)  
**Solubility:** slight solubility in water .1% to 1%  
**Partition coefficient (n-octanol/water):** not applicable  
**Auto ignition temperature:** 548 °F  
**Decomposition temperature:** not available  
**Viscosity:** not applicable  
**Molecular weight:** 58.12

## 10. Stability and Reactivity

**Stability:** Stable

**Hazardous polymerization:** Will not occur

**Conditions and Materials to Avoid:** Avoid heat, sparks, flame, and strong oxidizing agents.

**Hazardous Decomposition Products:** Thermal decomposition products are highly dependent on the combustion conditions. Carbon monoxide and other unidentified organic compounds may be formed upon combustion.

## 11. Toxicological Information

**Acute toxicity** – Butane is a simple asphyxiant that has slight anesthetic properties at high concentrations. Exposure can produce dizziness, headache, incoordination and narcosis; extremely high concentrations can cause asphyxiation and death by displacement of oxygen from the lungs.

**Skin corrosion/irritation** – Generally not a skin irritant.

**Eye damage/irritation** – Generally not an eye irritant. Pressurized gas can cause mechanical injuries to the eye.

**Sensitization** – Not known to cause respiratory or skin sensitization.

**Germ cell mutagenicity** – Information not available.

**Carcinogenicity** – Not suspected of causing cancer.

**Reproductive toxicity** – Not a known reproductive toxin.

**Specific Target Organs/Systemic Toxicity** – None Identified.

**Aspiration hazard** – Not applicable

## 12. Ecological Information

None identified – Butane will dissipate in air.

### 13. Disposal Considerations

This product, as produced, is not specifically listed as an EPA RCRA hazardous waste according to 40 CFR 261. However, when disposed of, it may meet the criteria of a “characteristic” hazardous waste. It is the responsibility of the user to determine if the material is considered hazardous for disposal under federal, state and local regulations.

### 14. Transportation Information

**Department of Transportation Classification:** Flammable Gas

**D.O.T. proper shipping name:** Liquefied Petroleum Gas (LPG)

**Other Requirements:** UN 1075

**Hazard Class:** 2.1

**Packing Group:** not applicable

### 15. Regulatory Information

**TSCA** This product is listed on the TSCA chemical inventory.

**SARA Section 302** This product does not contain constituents listed on the EPA’s extremely hazardous substance list.

**SARA Section 304** This product contains the following component(s) which in the event of a spill may be subject to SARA reporting requirements: none

**SARA Section 311/312** The following hazard categories apply to this product:

- Acute health hazard
- Fire hazard
- Sudden release of pressure

**SARA Section 313** This product does not contain any components which may be subject to reporting on a toxic release inventory.

### 16. Other Information

**Date Prepared:** June 24, 2011

**Date Revised:** October 30, 2013

**Last Reviewed:** October 30, 2013

**Disclaimer:**

The information and recommendations contained in this SDS are believed to be accurate at the date of its preparation. Whiting Oil and Gas Corporation makes no representations or warranties, express or implied, with respect to the accuracy or completeness of the information contained herein. Whiting Oil and Gas Corporation assumes no responsibility for incorrect handling or use of the product or the inherent hazards in the product itself.