1. PRODUCT AND COMPANY IDENTIFICATION

Product Code: 00008
Product Name: Butane
Company Name: Gas Innovations
18005 E. Hwy 225
La Porte, TX 77571
Web site address: www.gasinnovations.com
Emergency Contact: 3E (within United States)
Information: Infotrac (outside of United States)
Phone Number: +1 (281)471-2200

2. HAZARDS IDENTIFICATION

Flammable Gases, Category 1
Gas Under Pressure, Compressed gas

GHS Signal Word: Danger
GHS Hazard Phrases: H220 - Extremely flammable gas.
H280 - Containers gas under pressure; may explode if heated.
GHS Precaution Phrases: P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
GHS Response Phrases: P377 - Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
P381 - Eliminate all ignition sources if safe to do so.
GHS Storage and Disposal Phrases: P410+403 - Protect from sunlight and store in well-ventilated place.

Potential Health Effects (Acute and Chronic):
n-Butane is a simple asphyxiant. Inhalation of high concentration may cause rapid respiration, dizziness, fatigue, and nausea. Massive exposure may cause unconsciousness and death. Contact with the liquid phase or with the cold escaping from a cylinder may cause frostbite.
Inhalation: May be harmful if inhaled. May cause respiratory tract irritation. This material can act as a simple asphyxiant by displacement of air.
Skin Contact: May be harmful if absorbed through the skin. May cause skin irritation. May cause frostbite.
Eye Contact: May cause eye irritation.
Ingestion: May be harmful if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>CAS #</th>
<th>Hazardous Components (Chemical Name)</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>106-97-8</td>
<td>Butane</td>
<td>100 %</td>
</tr>
</tbody>
</table>

GHS format
4. FIRST AID MEASURES

Emergency and First Aid Procedures: Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

In Case of Inhalation: If breathed in, move person into fresh air. If not breathing give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen. Call a physician.

In Case of Skin Contact: Wash skin with soap and water. If skin irritation occurs, get medical advice/attention.

In Case of Eye Contact: Immediately flush eyes with plenty of water for at least 15 minutes. Hold eyelids apart and flush eyes with plenty of water. After initial flushings, remove any contact lenses and continue flushing for at least 15 minutes. Have eyes examined and tested by medical personnel.

In Case of Ingestion: Not expected to be a primary route of exposure.

5. FIRE FIGHTING MEASURES

Flash Pt: NA
Explosive Limits: LEL: 1.8 %(V) UEL: 8.4 %(V)
Autoignition Pt: 430 C (806 F)

Suitable Extinguishing Media: The only safe way to extinguish an n-butane fire is to stop the flow of gas. IF the flow cannot be stopped, let the fire burn out while cooling the cylinder and the surrounding areas using a water spray.

Fire Fighting Instructions: Personnel may have to wear approach-type protective suits and positive pressure self-contained breathing apparatus. Firefighters' turnout gear may be inadequate. Small secondary fires may be brought under control by using carbon dioxide or a dry chemical fire extinguisher and stopping the flow. Cylinders exposed to fire may rupture with violent force. Extinguishing surrounding fire and keep cylinders cool by applying water from a maximum possible distance with a water spray. Flammable gases may spread from a spill after the fire is extinguished and be subject to re-ignition.

6. ACCIDENTAL RELEASE MEASURES

Steps To Be Taken In Case Material Is Released Or Spilled: Shut off all sources of ignition. Ventilate the area. For controlling larger flows, personnel may have to wear approach-type protective suits and self-contained breathing apparatus.

7. HANDLING AND STORAGE

Precautions To Be Taken in Handling: Avoid inhalation of vapor or mist. Keep away from heat, sparks and flame. Keep away from sources of ignition - No smoking. Use spark-proof tools and explosion proof equipment. Use in a closed system. Secure all lines and equipment. Install check valves or traps to prevent suckback to the cylinder. Ground all lines and equipment. Leak check the lines and equipment. Have an emergency plan covering steps to be taken in the event of an accidental release.

Wear leather safety gloves and safety shoes when handling cylinders. Protect cylinders from physical damage; do not drag, roll, slide or drop. While moving cylinder, always keep in place removable valve cover. Never attempt to lift a cylinder by its cap; the cap is intended solely to protect the valve. When moving cylinders, even for short distances, use a cart (trolley, hand truck, etc.) designed to transport cylinders. Never insert an object (e.g., wrench, screwdriver, pry bar) into cap openings; doing so may damage the
valve and cause a leak. Use an adjustable strap wrench to remove over-tight or rusted
caps. Slowly open the valve. If the valve is hard to open, discontinue use and contact
your supplier. Close the container valve after each use; keep closed even when empty.
Never apply flame or localized heat directly to any part of the container. High
temperatures may damage the container and could cause the pressure relief device to
fail prematurely, venting the container contents.

Precautions To Be Taken in Storing:
Cylinders should be stored and used in dry, well-ventilated areas away from sources of
heat or ignition. Store away from oxidizers.

Other Precautions:
When handling product under pressure, use piping and equipment adequately designed
to withstand the pressures to be encountered. Never work on a pressurized system. Use
a back flow preventive device in the piping. Gases can cause rapid suffocation because
of oxygen deficiency; store and use with adequate ventilation. If a leak occurs, close the
container valve and blow down the system in a safe and environmentally correct manner
in compliance with all international, federal/national, state/provincial, and local laws; then
repair the leak. Never place a container where it may become part of an electrical circuit.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

<table>
<thead>
<tr>
<th>CAS #</th>
<th>Partial Chemical Name</th>
<th>OSHA TWA</th>
<th>ACGIH TWA</th>
<th>Other Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>106-97-8</td>
<td>Butane</td>
<td>No data.</td>
<td>TLV: (800 ppm)</td>
<td>No data.</td>
</tr>
</tbody>
</table>

Respiratory Equipment (Specify Type):
If exposure limits are exceeded or respiratory irritation is experienced, NIOSH/MSHA
approved respiratory protection should be worn. Gas displaces the air and causes a
deficiency of oxygen and the possibility of asphyxiation.

Eye Protection:
Wear safety glasses when handling cylinders; vapor-proof goggles and a face shield
during cylinder change out or whenever contact with product is possible. Select eye
protection in accordance with OSHA 29 CFR 1910.133.

Protective Gloves:
Wear appropriate gloves to prevent skin exposure.

Other Protective Clothing:
Not required under normal use conditions.

Engineering Controls (Ventilation etc.):
Use explosion-proof ventilation equipment. Facilities storing or utilizing this material
should be equipped with an eyewash facility and a safety shower.

Work/Hygienic/Maintenance Practices:
Handle in accordance with good industrial hygiene and safety practice. Wash hands
before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical States: [X] Gas  [ ] Liquid  [ ] Solid
Appearance and Odor:
Appearance: colorless.
Odor: Characteristic natural gas odor.
Specific Volume: 0.400 m3/kg, 6.4 ft3/lb @ 1 atm, 21.1°C.
Solubility in Water: 3.147 cm3/100 cm3 water @ 1 atm, 0°C.
Freezing Point: -138 °C (-217 °F)
Boiling Point: -0.60 °C (30.9 °F)
Decomposition Temperature: NA
Autoignition Pt: 430 °C (806 °F)
Flash Pt: NA  Method Used: Not Applicable
Explosive Limits:
LEL: 1.8 %(V)  UEL: 8.4 %(V)
Specific Gravity (Water = 1): NA
Density: 2.11 - @ 1 atm  at 20.0 °C (68.0 °F)
SAFETY DATA SHEET
Butane

Bulk density: NA
Vapor Pressure (vs. Air or mm Hg): 16.3 PSI at 21.1 C (70.0 F)
Vapor Density (vs. Air = 1): NA
Evaporation Rate: NA
Solubility in Water: 3.147 cm³ - per 100 cm³ at 0 C (32.0 F)
Saturated Vapor Concentration: NA
Viscosity: NA
pH: NA
Percent Volatile: NA
VOC / Volume: NA
Particle Size: NA
Heat Value: NA
Corrosion Rate: NA
Molecular Formula & Weight: C₄H₁₀ 58.124

10. STABILITY AND REACTIVITY

Reactivity: High temperatures and fire conditions can result in the formation of carbon monoxide and carbon dioxide.
Stability: Unstable [ ] Stable [ X ]
Conditions To Avoid - Instability: Heat, flames and sparks. No smoking.
Incompatibility - Materials To Avoid: Oxidizing materials.
Hazardous Decomposition Or Byproducts: High temperatures and fire conditions can result in the formation of carbon monoxide and carbon dioxide.
Possibility of Hazardous Reactions: Will occur [ ] Will not occur [ X ]
Conditions To Avoid - Hazardous Reactions: No data available.

11. TOXICOLOGICAL INFORMATION

Toxicological Information: Epidemiology: No information available.
Teratogenicity: No information available.
Reproductive Effects: No information available.
Mutagenicity: No information available.
Neurotoxicity: No information available.

Other Studies: CAS# 106-97-8:
Acute toxicity, LC50, Inhalation, Rat, 658 g/m³, 4H.
Carcinogenicity: NTP? No IARC Monographs? No OSHA Regulated? No
12. ECOLOGICAL INFORMATION

General Ecological Information: Environmental: No information available.
Physical: No information available.

Results of PBT and vPvB assessment: No data available.

Persistence and Degradability: No data available.

Bioaccumulative Potential: No data available.

Mobility in Soil: No data available.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method: Do not attempt to dispose of residual or unused quantities. Return container to supplier. Dispose of contents/containers in accordance with local/regional/national/international regulations.

14. TRANSPORT INFORMATION

LAND TRANSPORT (US DOT):

DOT Proper Shipping Name: Butane.
DOT Hazard Class: 2.1 FLAMMABLE GAS
UN/NA Number: UN1011

15. REGULATORY INFORMATION

EPA SARA (Superfund Amendments and Reauthorization Act of 1986) Lists

<table>
<thead>
<tr>
<th>CAS #</th>
<th>Hazardous Components (Chemical Name)</th>
<th>S. 302 (EHS)</th>
<th>S. 304 RQ</th>
<th>S. 313 (TRI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>106-97-8</td>
<td>Butane</td>
<td>No</td>
<td>No</td>
<td>No</td>
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CAS # Hazardous Components (Chemical Name) Other US EPA or State Lists

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<td>106-97-8</td>
<td>Butane</td>
<td>TSCA: Yes - Inventory; CA PROP.65: No; CA TAC, Title 8: Title 8; MA Oil/HazMat: Yes; MI CMR, Part 5: No; NC TAP: No; NJ EHS: Yes - 0273; NY Part 597: No; PA HSL: Yes - 1; SC TAP: No; WI Air: No</td>
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CAS # Hazardous Components (Chemical Name) International Regulatory Lists

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<tr>
<td>106-97-8</td>
<td>Butane</td>
<td>Canadian DSL: Yes; Canadian NDSL: No; Mexico INSQ: Yes - 1011; Australia ICS: Yes; New Zealand IOC: Yes; China IECS: Yes; Japan ENCS: Yes - (2)-4; Korea ECL: Yes - KE-03751; Philippines ICCS: Yes; REACH: Yes - (R), (P), C1, M2</td>
</tr>
</tbody>
</table>

16. OTHER INFORMATION

Revision Date: 03/25/2015
Additional Information About This Product: No data available.

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