

**1. PRODUCT AND COMPANY IDENTIFICATION**

**Product Code:** 00007  
**Product Name:** Butene  
**Company Name:** Gas Innovations

18005 E. Hwy 225  
La Porte, TX 77571

**Web site address:** www.gasinnovations.com      **Phone Number:** +1 (281)471-2200  
**Emergency Contact** 3E (within United States)      +1 (866)303-2640  
**Information:** Infotrac (outside of United States)  
**Synonyms:** Butylene, Cis-2-Butene, Trans-2-Butene      +1 (352)323-3500

**2. HAZARDS IDENTIFICATION**

**Flammable Gases:** Category 1  
**Gas Under Pressure:** Liquefied gas  
**Symbol:**



**GHS Signal Word:** Danger

**GHS Hazard Phrases:** H220 - Extremely flammable gas.  
H280 - Contains gas under pressure; may explode if heated.  
Harmful if inhaled. May form explosive mixture with air.

**GHS Precaution Phrases:** P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
Do not handle until all safety precautions have been read and understood

**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. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor if you feel unwell

**GHS Storage and Disposal Phrases:** P410+403 - Protect from sunlight when ambient temperature exceeds 52°C/125 °F and store in well-ventilated place. Use a back flow preventive device in the piping. Close valve after each use and when empty.

**Potential Health Effects (Acute and Chronic):** 1-Butene 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 gas escaping from cylinder may cause frostbite.

**Inhalation:** Category 4

**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**

CAS #	Hazardous Components (Chemical Name)	Concentration
106-98-9	Butene	100 %

**4. FIRST AID MEASURES**

<b>Emergency and First Aid Procedures:</b>	Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.
<b>In Case of Inhalation:</b>	If breathed in, move a person into fresh air. If not breathing give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, a trained person should give oxygen. Call a physician.
<b>In Case of Skin Contact:</b>	If frostbite or freezing occurs, 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. Wash with soap and large quantities of water. Get medical attention immediately.
<b>In Case of Eye Contact:</b>	Immediately flush your eyes with plenty of water for at least 15 minutes. Hold eyelids apart and flush eyes with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Have eyes examined and tested by medical personnel.
<b>In Case of Ingestion:</b>	Not expected to be a primary route of exposure. If swallowed, get medical attention

**5. FIRE FIGHTING MEASURES**

<b>Flash Pt:</b>	Not Applicable
<b>Method Used:</b>	Not Applicable
<b>Explosive Limits:</b>	Lower level: 1.6% (Volume in air)      Upper-level EL: 10% (Volume in air)
<b>Autoignition Pt:</b>	385 °C (725 °F)
<b>Suitable Extinguishing Media:</b>	The only safe way to extinguish a 1-Butene 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 or use carbon dioxide, regular dry chemical & for large fires use water spray or fog.
<b>Fire Fighting Instructions:</b>	Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Apply water from a protected location or from a safe distance. Stay away from the ends of tanks. For fires in cargo or storage area: Cool containers with water from unmanned hose holder or monitor nozzles until well after fire is out. Personnel may have to wear approach-type protective suits and positive pressure self-contained breathing apparatus. Firefighters' turnout gear may be inadequate. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. Cylinders exposed to fire may rupture with violent force. Extinguish 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.
<b>Flammable Properties and Hazards:</b>	High temperatures and fire conditions can result in the formation of carbon monoxide and carbon dioxide. Forms explosive mixtures with air and oxidizing agents.
<b>Hazardous Combustion Products:</b>	High temperatures and fire conditions can result in the formation of carbon monoxide and carbon dioxide.

**6. ACCIDENTAL RELEASE MEASURES****Protective Precautions,  
Protective Equipment and  
Emergency Procedures:**

Use proper personal protective equipment as indicated in Section 8. Reduce vapors with fog or fine water spray, taking care not to spread liquid with water.

**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. Keep unnecessary people away, isolate hazard areas and deny entry. Ventilate closed spaces before entering.

**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 the cylinder to prevent it from falling or being knocked over. Install check valves or traps to prevent sucking back 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 the cylinder, always keep in place removable valve cover. Never attempt to lift a cylinder with 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. Use a first-in, first-out inventory system to prevent storing full containers for long periods.

**Other Precautions:**

When handling a 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; stored 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**

CAS #	Partial Chemical Name	OSHA TWA	ACGIH OEL TWA	NIOSH IDLH
106-98-9	Butene	No data	250 ppm	No data

**Respiratory Equipment  
(Specify Type):**

Positive pressure self-contained breathing apparatus (SCBA) should be worn if it is suspected that 1-butene is in the air. 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 changeout or whenever contact with the product is possible. Select eye protection in accordance with OSHA 29 CFR 1910.133. For the liquid, Wear splash-

resistant safety goggles. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

<b>Protective Gloves:</b>	Wear appropriate protective gloves to prevent skin exposure.
<b>Other Protective Clothing:</b>	Safety shoes for general handling at customer sites. Metatarsal shoes and cuffless trousers for cylinder handling at packaging and filling plants.
<b>Engineering Controls (Ventilation etc.):</b>	Use explosion-proof ventilation equipment. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.
<b>Work/Hygienic/Maintenance Practices:</b>	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

<b>Physical States:</b>	[ X ] Gas	[ ] Liquid	[ ] Solid
<b>Appearance and Odor:</b>	Colorless & Aromatic odor		
<b>Specific Volume:</b>	573 m <sup>3</sup> /kg @ 25°C		
<b>pH:</b>	NA		
<b>Freezing Point:</b>	-185 C (-302 F)		
<b>Boiling Point:</b>	-6.47 °C (at 760 mmHg)		
<b>Flash Pt:</b>	Not Applicable		
<b>Method used:</b>	Not Applicable		
<b>Evaporation Rate:</b>	NA		
<b>Flammability (solid, gas):</b>	1.6 – 9.3 vol %		
<b>Explosive Limits:</b>	Lower level: 1.6% (Volume in air)	Upper-level EL: 10 % (Volume in air)	
<b>Vapor Pressure (vs. Air or mm Hg):</b>	260 kPa		
<b>Vapor Density (air=1)</b>	1.93		
<b>Specific Gravity (Water = 1):</b>	0.577 at 25 °C		
<b>Density:</b>	2.54 kg/m <sup>3</sup> at 15 °C		
<b>Bulk density:</b>	NA		
<b>Solubility in Water:</b>	61 g/L (@ 20 °C)		
<b>Saturated Vapor Concentration:</b>	NA		
<b>Octanol/Water Partition Coefficient:</b>	2.4		
<b>Percent Volatile:</b>	NA		
<b>VOC / Volume:</b>	NA		
<b>HAP / Volume:</b>	NA		
<b>Autoignition Pt:</b>	385 °C (725 °F)		
<b>Decomposition Temperature:</b>	NA		
<b>Viscosity:</b>	0.00763 cp		
<b>Particle Size:</b>	NA		
<b>Heat Value:</b>	NA		
<b>Corrosion rate:</b>	NA		
<b>Molecular Formula:</b>	C <sub>4</sub> H <sub>8</sub>		
<b>Molar mass:</b>	56.108 g/mol		

**10. STABILITY AND REACTIVITY**

<b>Reactivity:</b>	High temperatures and fire conditions can result in the formation of carbon monoxide and carbon dioxide.
<b>Stability:</b>	Unstable [ ] Stable [ X ]
<b>Conditions To Avoid - Instability:</b>	Heat, flames and sparks. No smoking. Minimize contact with material. Containers may rupture or explode if exposed to heat.
<b>Incompatibility Materials to Avoid:</b>	Oxidizing agents. Acids, halogens, metal salts.
<b>Hazardous Decomposition or Byproducts:</b>	High temperatures and fire conditions can result in the formation of carbon monoxide and carbon dioxide.
<b>Possibility of Hazardous Reactions:</b>	Will occur [X] Will not occur [ ]
<b>Conditions To Avoid - Hazardous Reactions:</b>	No data available.

**11. TOXICOLOGICAL INFORMATION**

<b>Epidemiology:</b>	No information available.
<b>Teratogenicity:</b>	No information available.
<b>Reproductive Effects:</b>	No information available.
<b>Mutagenicity:</b>	No information available.
<b>Neurotoxicity:</b>	No information available.
<b>Carcinogenicity:</b>	NTP - No      IARC Monographs - No      OSHA Regulated - No

**12. ECOLOGICAL INFORMATION**

<b>General Ecological Information:</b>	Environmental: No information available. Physical: No information available.
<b>Results of PBT and vPvB assessment:</b>	No data available.
<b>Persistence and Degradability:</b>	No data available.
<b>Bio accumulative Potential:</b>	Bioconcentration potential in aquatic organisms is low based on a BCF value of 14
<b>Mobility in Soil:</b>	No data available.

**13. DISPOSAL CONSIDERATIONS**

<b>Waste Disposal Method:</b>	Do not attempt to dispose of residual or unused quantities. Return container to supplier. Dispose of contents and containers in accordance with local, regional, national, and international regulations.
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## 14. TRANSPORT INFORMATION

## LAND TRANSPORT (US DOT):

DOT Proper Shipping name: BUTYLENE  
 DOT Hazard Class: 2.1 FLAMMABLE GAS  
 UN/NA number: UN1012  
 Labels:



## Air &amp; Sea Transport:

## Transport document description (IMDG):

UN-No. (IMDG): 1012  
 Proper Shipping Name (IMDG): PETROLEUM GASES, LIQUEFIED  
 Class (IMDG): 2 - Gases  
 MFAAG-No: 115  
 Transport document description (IATA):  
 UN-No. (IATA): 1012  
 Proper Shipping Name (IATA): Petroleum gases, liquefied  
 Class (IATA): 2 - Gases

## 15. REGULATORY INFORMATION

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

CAS #	Hazardous Components (Chemical Name)	S. 302 (EHS)	S. 304 RQ	S. 313 (TRI)
106-98-9	Butene	No	No	No

CAS #	Hazardous Components (Chemical Name)
106-98-9	Butene

## Other US EPA or State Lists

TSCA: Yes - Inventory; CA PROP.65: No; CA TAC, Title 8: No; MA Oil/HazMat: Yes; MI CMR, Part 5: No; NC TAP: No; NJ EHS: Yes - 3600; NY Part 597: No; PA HSL: Yes - 1; SC TAP: No; WI Air: No; MN : No;

CAS #	Hazardous Components (Chemical Name)
106-98-9	Butene

## International Regulatory Lists

Canadian DSL: Yes; Canadian NDSL: No; Mexico INSQ: Yes; Australia ICS: Yes; New Zealand IOC: Yes; China IECSC: Yes; Japan ENCS: Yes - 9-1697; Korea ECL: Yes - KE-03887.  
 Philippines ICCS: Yes; REACH: Yes - 01-2119456615-34: Full,  
 (P); TH- TECL: Yes ; TW: Yes; CN: Yes; VN(Draft): Yes ;

**16. OTHER INFORMATION**

**Revision Date:** 07/30/2024

**Additional Information:** No data available

**NFPA Ratings:**  
0= Minimal Hazard  
1= Slight Hazard  
2= Moderate Hazard  
3= Serious Hazard  
4= Severe Hazard

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