

# Safety Data Sheet

## 1-Butene

**PurityPlus Gases**  
6331 East 30th Street  
P.O. Box 19907  
Indianapolis, IN 46219-0907  
317.562.1483 (tel)  
317.562.1484 (fax)

### Section 1: Product and Company Identification

**PurityPlus Gases**

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P.O. Box 19907  
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Product Code: 1-Butene

### Section 2: Hazards Identification



**Danger**

**Hazard Classification:**

Flammable (Category 1)  
Flammable Aerosol (Category 1)  
Gases Under Pressure

**Hazard Statements:**

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

**Precautionary Statements**

**Prevention:**

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
Pressurized container: Do not pierce or burn, even after use.  
Do not spray on an open flame or other ignition source.

**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.  
Do not expose to temperatures exceeding 50C/122F.

## Section 3: Composition/Information on Ingredients

CAS #
106-98-9

Chemical Substance	Chemical Family	Trade Names
1-BUTENE	hydrocarbons, aliphatic	ALPHA-BUTYLENE; ETHYLETHYLENE; BUTYLENE; ALPHA-BUTENE; BUTENE-1; N-BUTENE; N-BUTYLENE; 1-BUTYLENE; UN 1012; C4H8;

## Section 4: First Aid Measures

Skin Contact	Eye Contact	Ingestion	Inhalation	Note to Physicians
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.	Contact with liquid: Immediately flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.	If a large amount is swallowed, get medical attention.	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.	For inhalation, consider oxygen.

## Section 5: Fire Fighting Measures

Suitable Extinguishing Media	Products of Combustion	Protection of Firefighters
Carbon dioxide, regular dry chemical Large fires: Flood with fine water spray.	Carbon monoxide, carbon dioxide, water and toxic and irritating fumes	<ul style="list-style-type: none"><li>Respiratory protection may be needed for frequent or heavy exposure.</li><li>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. Any self-contained breathing apparatus with a full facepiece.</li></ul>

## Section 6: Accidental Release Measures

Personal Precautions	Environmental Precautions	Methods for Containment
Keep unnecessary people away, isolate hazard area and deny entry. Do not touch spilled material.	Avoid heat, flames, sparks and other sources of ignition.	Stop leak if possible without personal risk. Reduce vapors with water spray. Remove sources of ignition. Ventilate closed spaces before entering.

Methods for Cleanup	Other Information
Stop leak, evacuate area and ventilate. Prevent waste from contaminating environment.	N/A

## Section 7: Handling and Storage

Handling	Storage
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Handling	Storage
Store and use with adequate ventilation. Firmly secure cylinders upright to keep them from falling or being knocked over. Screw valve protection cap firmly in place by hand. Store only where temperature will not exceed 125°F (52°C). Store full and empty cylinders separately. Use a first-in, first-out inventory system to prevent storing full cylinders for long periods.	Do not get liquid in eyes, on skin, or clothing. Do not smoke in areas where fluorocarbons are used. Wash hands thoroughly after handling fluorocarbons or materials sprayed with them, especially before eating or smoking. Protect cylinders from damage. Use a suitable hand truck to move cylinders; do not drag, roll, slide, or drop. Never attempt to lift a cylinder by its cap; the cap is intended solely to protect the valve. 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. Open valve slowly. Close cylinder valve after each use; keep closed even when empty. If valve is hard to open, discontinue use and contact your supplier.

## Section 8: Exposure Controls/Personal Protection

### Exposure Guidelines

1-BUTENE: No occupational exposure limits established.

### Engineering Controls

Handle only in fully enclosed systems.

Eye Protection	Skin Protection	Respiratory 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.	For the gas: Protective clothing is not required. For the liquid: Wear appropriate protective, cold insulating clothing.	Respiratory protection may be needed for frequent or heavy exposure.

### General Hygiene considerations

- Avoid breathing vapor or mist
- Avoid contact with eyes and skin
- Wash thoroughly after handling and before eating or drinking

## Section 9: Physical and Chemical Properties

Physical State	Appearance	Color	Change in Appearance	Physical Form	Odor	Taste
Gas	Colorless	Colorless	N/A	Gas	Distinct odor	N/A

Flash Point	Flammability	Partition Coefficient	Autoignition Temperature	Upper Explosive Limits	Lower Explosive Limits
-112 F (-80 C)			725 F (385 C)	0.1	0.016

Boiling Point	Freezing Point	Vapor Pressure	Vapor Density	Specific Gravity	Water Solubility	pH	Odor Threshold	Evaporation Rate	Viscosity
21 F (-6 C)	-301 F (-185 C)	1976 mmHg @ 21.1 C	2 (Air=1)	Not applicable	Insoluble	Not applicable	24 ppm (55 mg/m3) (unspecified)	Not applicable	0.00763 cP @ 20 C

Molecular Weight	Molecular Formula	Density	Weight per Gallon	Volatility by Volume	Volatility	Solvent Solubility
56.11	C-H3-C-H2-C-H-C-H2	2.3655 kg/m3 @ 25 C	Not available	100%	Not applicable	Soluble: Alcohol, ether, benzene

## Section 10: Stability and Reactivity

Stability	Conditions to Avoid	Incompatible Materials
Stable at normal temperatures and pressure.	Stable at normal temperatures and pressure.	Metal salts, oxidizing materials, halogens, acids

Hazardous Decomposition Products	Possibility of Hazardous Reactions
Oxides of carbon	Polymerizes with evolution of heat. Avoid contact with incompatible materials.

## Section 11: Toxicology Information

### Acute Effects

Oral LD50	Dermal LD50	Inhalation
Inhalation LC50 Rat 658 mg/L 4 h	Not established	Mild irritation, nausea, vomiting, symptoms of drunkenness, suffocation, convulsions, coma

Eye Irritation	Skin Irritation	Sensitization
Mild irritation, frostbite, blurred vision	Blisters, frostbite	Central nervous system depression, difficulty breathing

### Chronic Effects

Carcinogenicity	Mutagenicity	Reproductive Effects	Developmental Effects
Not listed	Not established	Not established	No data

## Section 12: Ecological Information

### Fate and Transport

Eco toxicity	Persistence / Degradability	Bioaccumulation / Accumulation	Mobility in Environment
Fish toxicity: Not available Invertebrate toxicity: Not available Algal toxicity: Not available Phyto toxicity: Not available Other toxicity: Not available	Not available	Not available	Not available

## Section 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.

## Section 14: Transportation Information

### U.S. DOT 49 CFR 172.101

Proper Shipping Name	ID Number	Hazard Class or Division	Packing Group	Labeling Requirements	Passenger Aircraft or Railcar Quantity Limitations	Cargo Aircraft Only Quantity Limitations	Additional Shipping Description
Butylene	UN1012	2.1	Not available	2.1	Forbidden	150 kg	N/A

### Canadian Transportation of Dangerous Goods

Shipping Name	UN Number	Class	Packing Group / Risk Group
Butylene	UN1012	2.1	N/A

## Section 15: Regulatory Information

### U.S. Regulations

CERCLA Sections	SARA 355.30	SARA 355.40
Not regulated.	Not regulated.	Not regulated.

### SARA 370.21

Acute	Chronic	Fire	Reactive	Sudden Release
Yes	No	Yes	No	Yes

### SARA 372.65

Not regulated.

### OSHA Process Safety

Not regulated.

### State Regulations

#### CA Proposition 65

Not regulated.

### Canadian Regulations

#### WHMIS Classification

A, B1

### National Inventory Status

US Inventory (TSCA)	TSCA 12b Export Notification	Canada Inventory (DSL/NDSL)
Listed on inventory.	Not listed.	Listed on inventory.

## Section 16: Other Information

#### NFPA Rating

HEALTH=1 FIRE=4 REACTIVITY=0

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard