



Material Safety Data Sheet

1. Product and Company Identification

Product name : **N-Butane**

Chemical formula : C-H3-(C-H2)2-C-H3

Synonyms : Butane, Liquefied Petroleum Gas, Normal Butane, Butyl Hydride; LPG; UN 1011

Company : Specialty Gases of America, Inc
6055 Brent Dr.
Toledo, OH 43611

Telephone : 419-729-7732

Emergency : 800-424-9300

2. Composition/Information on Ingredients

Components	CAS Number	% Volume
N-Butane	106-97-8	100%

Component Related Regulatory Information

This product may be regulated, have exposure limits or other information identified as the following:
Aliphatic hydrocarbon gases (Alkane [C1-C4]).

3. Hazards Identification

Emergency Overview

Flammable gas. May cause flash fire.
May cause central nervous system depression, difficulty breathing.

Potential Health Effects

Inhalation : Irritation, nausea, vomiting, headache, drowsiness, symptoms of drunkenness, tingling sensation, suffocation, convulsion, coma.

Eye contact : Blurred vision, frostbite.

Skin contact : Blisters, frostbite.

Ingestion : Frostbite.

Chronic Health Hazard : Not applicable.

4. First Aid Measures

General advice : None.

Eye contact : Contact with liquid: Immediately flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

Skin contact : 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 blanket. Get immediate medical attention.

Ingestion : If a large amount is swallowed, get medical attention.

- Inhalation : 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.
- Note to physicians : For inhalation, consider oxygen.

5. Fire-Fighting Measures

- Suitable extinguishing media : Carbon dioxide, regular dry chemical.
Large fires: Flood with fine water spray.
- Specific hazards : Severe explosion hazards. Severe fire hazard. Vapor/air mixtures are explosive. The vapor is heavier than air. Vapors or gases may ignite at distant ignition sources and flash back.
- Fire fighting : Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. 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. If this is impossible then take the following precautions: Keep unnecessary people away, isolate hazard area and deny entry. Let the fire burn. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. For tank, rail car or tank truck: Stop leak if possible without personal risk. Let burn unless leak can be stopped immediately. For smaller tanks or cylinders, extinguish and isolate from other flammables. Evacuation radius: 800 meters (1/2 mile). Stop flow of gas.

6. Accidental Release Measures

- Occupational spill/release : Avoid heat, flames, sparks and other sources of ignition. Do not touch spilled material. Stop leak if possible without personal risk. Reduce vapors with water spray. Keep unnecessary people away. Isolate hazard area and deny entry. Remove sources of ignition. Ventilate closed spaces before entering.
- Additional advice : None.

7. Handling and Storage

Handling

Secure cylinder when using to protect from falling. Use suitable hand truck to move cylinders.

Storage

Store in accordance with all current regulations and standards. Subject to storage regulation: U.S. OSHA 29 CFR 1910.110. Grounding and bonding required. U.S. OSHA 29 CFR 1910.101. Keep separated from incompatible substances.

8. Exposure Controls / Personal Protection

Exposure limits

- ACGIH : 1000 ppm TWA
OSHA (vacated) : 800 ppm TWA; 1900 mg/m³ TWA
NIOSH : 800 ppm TWA; 1900 mg/m³ TWA

Engineering measures/Ventilation

Ventilation equipment should be explosion-resistant if explosive concentrations of material are present. Provide local exhaust ventilation system. Ensure compliance with applicable exposure limits.

Personal protective equipment

- Respiratory protection : The following respirators and maximum use concentrations are drawn from NIOSH and/or OSHA.

2000 ppm – Any supplied-air respirator.
 Any self-contained breathing apparatus with a full facepiece.
 Emergency or planned entry into unknown concentrations or IDLH conditions –
 Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode.
 Any supplied-air respirator with a full facepiece that is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained breathing apparatus operated in pressure-demand or other positive-pressure mode.
 Escape – Any appropriate escape-type, self-contained breathing apparatus.
 For unknown concentrations or immediately dangerous to life or death – Any supplied-air respirator with a full facepiece that is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained breathing apparatus operated in pressure-demand or other positive-pressure mode.
 Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode.

- Hand protection : Wear insulated gloves.
- Eye protection : For the gas: Eye protection is 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.
- Skin and body protection : For the gas, Protective clothing is not required. For the liquid: Wear appropriate protective, cold insulating clothing.

9. Physical and Chemical Properties

- Form : Gas.
- Color : Colorless.
- Odor : Unpleasant odor.
- Molecular weight : 58.12
- Vapor pressure : 1557 mmHg @ 20°C
- Vapor density : 2.1 (air = 1)
- Specific gravity : 0.5788 @ 0°C (water = 1)
- Boiling point : 30°F (-1°C)
- Melting point : -216°F (-138°C)
- Water solubility : 15%
- Auto ignition : 287°C
- Solvent solubility : Soluble: alcohol, ether, chloroform.

10. Stability and Reactivity

- Stability : Stable at normal temperatures and conditions.
- Conditions to avoid : Avoid heat, flames, sparks and other sources of ignition. Minimize contact with material. Containers may rupture or explode if exposed to heat.
- Materials to avoid : Oxidizing materials.
- Hazardous decomposition products : Thermal decomposition products: oxides of carbon.

11. Toxicological Information

The components of this material have been reviewed in various sources and the following selected endpoints are published:

N-BUTANE (106-97-8) : Inhalation LC50 Rat: 658 mg/L/4H

Acute Toxicity Level

N-BUTANE (106-97-8) : Non toxic: inhalation

Component Carcinogenicity

None of this product's components are listed by ACGIH, IARC, NTP, OSHA or DFG.

Target Organs

N-BUTANE (106-97-8) : Central nervous system

Additional Data

Stimulants such as epinephrine may induce ventricular fibrillation.

12. Ecological Information

No LOEL ecotoxicity data are available for this product's components.

13. Disposal Considerations

Waste from residues / unused products : Dispose in accordance with all applicable regulations. Subject to disposal regulations: U.S. EPA 40 CFR 262. Hazardous Waste Number(s): D001.
Contaminated packaging : Return cylinder to supplier.

14. Transport Information

TDG and DOT

Proper shipping name : Butane
Class : 2.1
UN/ID No. : UN1011
Labeling : Flammable Gas

Maritime transport IMDG

Proper shipping name : Butane
Class : 2.1
UN/ID No. : UN1011
Labeling : 2.1
Packaging group : -
EMS Number : F-D,S-U
Maritime pollutant : No

Air transport ICAO-TI and IATA-DGR

Trade name : Butane
Class : 2.1
UN/ID No. : UN1011
Labeling : 2.1
Packaging group : -

Further information

Cylinders should be transported in a secure upright position in a well ventilated truck.

15. Regulatory Information

U.S. Federal Regulations

None of this product's components are listed under SARA Section 302/304 (40 CFR 355 Appendix A), SARA 311/312 (40 CFR 370.21), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), or require an OSHA process safety plan.

SARA 311/312

Acute: Yes
Chronic: No
Fire: Yes
Reactive: No
Pressure: Yes

U.S. State Regulations

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	CA	MA	MN	NJ	PA	RI
N-BUTANE	106-97-8	Yes	Yes	Yes	Yes	Yes	Yes

Not regulated under California Proposition 65.

16. Other Information

Prepared by : Specialty Gases of America, Inc.

For additional information, please visit our website at www.americangasgroup.com.