



Material Safety Data Sheet

1. Product and Company Identification

Product name : **Hexafluoro-1,3-Butadiene**

Chemical formula : C₄F₆

Synonyms : 1,1,2,3,4,4-Hexafluoro-1,3-Butadiene; 1,3-Butadiene,1,1,2,3,4,4-Hexafluoro-; 1,1,2,3,4,4-Hexafluorobuta-1,3-Diene; 1,3-Butadiene,Hexafluoro-; Hexafluorobuta-1,3-Diene; Hexafluorobutadiene-1,3; Perfluoro-1,3-Butadiene; Pefluorobuta-1,3-Diene; Perfluorobutadiene-1,3; Perfluorobutadiene

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
Hexafluoro-1,3-Butadiene	685-63-2	100%

3. Hazards Identification

Emergency Overview

Flammable gas. May cause flash fire. Flash back hazard.
Harmful if inhaled.

Potential Health Effects

Inhalation : Irritation, cough, irregular heartbeat, drowsiness, dizziness.
Eye contact : Irritation.
Skin contact : Irritation.
Ingestion : Ingestion of a gas is unlikely.
Chronic Health Hazard : None known.

4. First Aid Measures

Eye contact : 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 immediate medical attention.

Inhalation : If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. Get immediate medical attention.

Note to physicians : Avoid adrenaline or other stimulants.

5. Fire-Fighting Measures

- Suitable extinguishing media : Regular dry chemical, carbon dioxide, water, alcohol-resistant foam.
Large fires: Use regular foam or flood with fine water spray.
- Specific hazards : Severe fire hazard. The vapor is heavier than air. Vapors or gases may ignite at distant ignition sources and flash back. Vapor/air mixtures are explosive.
Containers may rupture or explode if exposed to heat.
- 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. For tank, rail car or tank truck: Let burn unless leak can be stopped immediately. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. For smaller tanks or cylinders, extinguish and isolate from other flammables. Evacuation radius: 800 meters (1/2 mile). Do not attempt to extinguish fire unless flow of material can be stopped first. Flood with fine water spray. Cool containers with water. Apply water from a protected location or from a safe distance. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas.

6. Accidental Release Measures

- Occupational spill/release : 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. Keep unnecessary people away, isolate hazard area and deny entry.
- 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 regulations: U.S. OSHA 29 CFR 1910.101. Avoid heat, flames, sparks and other sources of ignition. Store below 52°C. Keep container tightly closed. Store in a cool, dry place. Keep separated from incompatible substances. Store in a well ventilated area.

8. Exposure Controls / Personal Protection

ACGIH, OSHA and NIOSH have not developed exposure limits for any of this product's components.

Engineering measures/Ventilation

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

Personal protective equipment

- Respiratory protection : Under conditions of frequent use or heavy exposure, respiratory protection may be needed.
Respiratory protection is ranked in order from minimum to maximum.
Consider warning properties before use.
For unknown Concentrations or Immediately Dangerous to Life or Health – 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 : Wear splash resistant safety goggles with a faceshield. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.
- Skin and body protection : Wear protective clothing to prevent contact.

9. Physical and Chemical Properties

- Form : Compressed, liquefied gas.
- Color : Colorless.
- Odor : Odorless.
- Molecular weight : 162.03
- Vapor pressure : 25 psia @ 20°C
- Vapor density : 6.79 @ 15°C
- Boiling point : 6 – 7°C
- Melting point : -132°C
- Specific gravity : 1.553 @ -20°C
- Water solubility : Insoluble.

10. Stability and Reactivity

- Stability : Stable under normal conditions.
- Conditions to avoid : Avoid heat, flames, sparks and other sources of ignition. Minimize contact with material. Avoid inhalation of material or combustion by-products. Keep out of water supplies and sewers.
- Materials to avoid : Oxidizing materials, alkali metals, combustible materials, metals.
- Hazardous decomposition products : Thermal decomposition products: oxides of carbon, hydrogen fluoride, fluorinated compounds, carbonyl fluoride.

11. Toxicological Information

The components of this material have been reviewed in various sources and no selected endpoints have been identified.

Acute Toxicity Level

- HEXAFLUORO-1,3-BUTADIENE (685-63-2) : Toxic: inhalation

Component Carcinogenicity

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

Medical Conditions Aggravated by Exposure

Heart disorders, nervous system disorders, skin disorders, respiratory disorders, kidney disorders.

12. Ecological Information

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

13. Disposal Considerations

Waste from residues : Dispose in accordance with all applicable regulations.
/ unused products
Contaminated : Return cylinder to supplier.
packaging

14. Transport Information

DOT (US only)

Proper shipping name : Liquefied gas toxic, flammable, n.o.s. (Contains: Hexafluoro-1,3-Butadiene)
Class : 2.3
UN/ID No. : UN3106
Labeling : Poison Gas, Flammable Gas

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 Section 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

None of this product's components are listed on the state lists from CA, MA, MN, NJ, PA or RI.

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.