



Material Safety Data Sheet

1. Product and Company Identification

Product name : **Octafluorocyclobutane**

Chemical formula : C₄F₈

Synonyms : Cyclobutane, Octafluoro-; Cyclooctafluorobutane; Perfluorocyclobutane; Refrigerant C318; R C318

Company : Med Tech Gases, Inc.
20 Hall Street
Medford, MA 02155

Telephone : 800-FINE-GAS

Emergency : 800-424-9300

2. Composition/Information on Ingredients

Components	CAS Number	% Volume
Octafluorocyclobutane	115-25-3	100%

3. Hazards Identification

Emergency Overview

May cause difficulty breathing.
Containers may rupture or explode if exposed to heat.

Potential Health Effects

Inhalation : Nausea, vomiting, irregular heartbeat, dizziness, tingling sensation, difficulty breathing, suffocation, convulsions, coma.

Eye contact : Frostbite, blurred vision.

Skin contact : Frostbite, blurred vision.

Ingestion : Frostbite.

Chronic Health Hazard : None known.

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 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. 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. 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: Use regular foam or flood with fine water spray.

Specific hazards : Negligible fire hazard.

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. 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: Evacuation radius: 800 meters (1/2 mile). Use extinguishing agents appropriate for surrounding fire. Cool containers with water spray until well after the fire is out. Apply water from a protected location or from a safe distance. Do not get water directly on material. Reduce vapors with water spray. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas. Consider downwind evacuation if material is leaking.

Protective Equipment and Precautions for Firefighters : Wear full protective fire fighting gear including self contained breathing apparatus (SCBA) for protection against possible exposure.

6. Accidental Release Measures

Occupational spill/release : Stop leak if possible without personal risk. Keep unnecessary people away, isolate hazard area and deny entry. Stay upwind and keep out of low areas.

Additional advice : None.

7. Handling and Storage

Handling

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

Storage

Subject to storage regulations: U.S. OSHA 29 CFR 1910.101. Store in accordance with all current regulations and standards. Keep containers tightly closed and in a well-ventilated place. protect from physical damage. Protect from sunlight. Keep separated from incompatible substances.

8. Exposure Controls / Personal Protection

Exposure limits

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

Engineering measures/Ventilation

Provide local exhaust or process enclosure ventilation system. 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.
Any supplied-air respirator with a full facepiece that is operated in a 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.
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 : 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 : Odorless.
- Molecular weight : 200.03
- Vapor pressure : 2052 mmHg @ 21.1°C
- Vapor density : 7.33 (air = 1)
- Boiling point : -6°C
- Melting point : -39°C
- Water solubility : 0.014%
- Solvent solubility : Soluble: ether.

10. Stability and Reactivity

- Stability : Stable under normal conditions.
- Conditions to avoid : Protect from physical damage and heat. Containers may rupture or explode if exposed to heat.
- Materials to avoid : Metals.
- Hazardous decomposition products : Thermal decomposition products: halogenated compounds, oxides of carbon.

11. Toxicological Information

Component Analysis – LD50/LC50

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

Component Carcinogenicity

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

Additional Data

Stimulants such as epinephrine may induce ventricular fibrillation.

12. Ecological Information

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

13. Disposal Considerations

- Waste from residues / unused products : Dispose in accordance with all applicable regulations.

Contaminated packaging : Return cylinder to supplier.

14. Transport Information

DOT (US only)

Proper shipping name : Octafluorocyclobutane
Class : 2.2
UN/ID No. : UN1976
Labeling : Non-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: No
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
OCTAFLUOROCYCLOBUTANE	115-25-3	No	No	No	Yes	No	No

Not regulated under California Proposition 65