

Issue Date: 23-Sep-2021

Revision Date: 24-Jun-2024

Version 3

## 1. IDENTIFICATION

**Product identifier**

**Product Name** Octafluorocyclobutane

**Other means of identification**

**SDS #** EF-015

**Synonyms**

CYCLOBUTANE, OCTAFLUORO-; CYCLOOCTAFLUOROBUTANE;  
PERFLUOROCYCLOBUTANE; REFRIGERANT C318; R C318; C4F8; RTECS:  
GU1779500.

**UN/ID No**

UN1976

**Recommended use of the chemical and restrictions on use**

**Recommended Use** For industrial use.

**Details of the supplier of the safety data sheet**

**Supplier Address**

EFC Gases & Advanced Materials  
3266 Bergey Road  
Hatfield, PA 19440  
Email: [efcsafety@efcgases.com](mailto:efcsafety@efcgases.com)

**Emergency telephone number**

**Company Phone Number** 215-443-9600  
**Emergency Telephone** INFOTRAC 1-352-323-3500 (International)  
1-800-535-5053 (North America)

## 2. HAZARDS IDENTIFICATION

**Appearance** Colorless gas

**Physical state** Gas

**Odor** Odorless

**Classification**

Gases under pressure

Liquefied gas

**Signal Word**

Warning

**Hazard statements**

Contains gas under pressure; may explode if heated



**Precautionary Statements - Storage**

Protect from sunlight. Store in a well-ventilated place

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

**Synonyms** CYCLOBUTANE, OCTAFLUORO-; CYCLOOCTAFLUOROBUTANE;  
PERFLUOROCYCLOBUTANE; REFRIGERANT C318; R C318; C4F8; RTECS:  
GU1779500.

**Chemical Family** Halogenated, aliphatic.

Chemical name	CAS No	Weight-%
Octafluorocyclobutane	115-25-3	100

\*\*If Chemical Name/CAS No is "proprietary" and/or Weight-% is listed as a range, the specific chemical identity and/or percentage of composition has been withheld as a trade secret.\*\*

### 4. FIRST AID MEASURES

#### Description of first aid measures

**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 blankets. 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.

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

#### Most important symptoms and effects, both acute and delayed

**Symptoms** Frostbite, difficulty breathing, suffocation, irregular heartbeat.

#### Indication of any immediate medical attention and special treatment needed

**Notes to Physician** For inhalation, consider oxygen.

### 5. FIRE-FIGHTING MEASURES

#### Suitable Extinguishing Media

Carbon dioxide, regular dry chemical.

**Large Fire** Use regular foam or flood with fine water spray.

**Unsuitable Extinguishing Media** None known.

#### Specific Hazards Arising from the Chemical

Negligible fire hazard.

#### Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. 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.

## 6. ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

**Personal Precautions** Wear personal protective clothing and equipment, see Section 8.

### Environmental precautions

**Environmental precautions** Avoid release to the environment. See Section 12 for additional Ecological Information.

### Methods and material for containment and cleaning up

**Methods for Containment** Stop leak if you can do it without risk. Keep unnecessary people away, isolate hazard area and deny entry.

**Methods for Clean-Up** Do not enter confined spaces unless adequately ventilated. Damaged cylinders should be handled only by specialists.

## 7. HANDLING AND STORAGE

### Precautions for safe handling

**Advice on Safe Handling** Wash thoroughly after handling.

### Conditions for safe storage, including any incompatibilities

**Storage Conditions** Store and handle in accordance with all current regulations and standards. Keep container tightly closed and in a well-ventilated place. Protect from physical damage. Protect from sunlight. Keep separated from incompatible substances.

**Incompatible Materials** Metals.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Exposure Guidelines** This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies

### Appropriate engineering controls

**Engineering Controls** Provide local exhaust or process enclosure ventilation to maintain levels below the recommended exposure limit. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

### Individual protection measures, such as personal protective equipment

**Eye/Face Protection** Wear splash resistant safety goggles with a faceshield.

**Skin and Body Protection** For the gas: protective clothing and gloves are not required, but recommended. For the liquid: Wear appropriate protective, cold insulating clothing and gloves.

**Respiratory Protection** Under conditions of frequent use or heavy exposure, respiratory protection may be needed.

**General Hygiene Considerations** Handle in accordance with good industrial hygiene and safety practice.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

<b>Physical state</b>	Gas	<b>Odor</b>	Odorless
<b>Appearance</b>	Colorless gas	<b>Odor Threshold</b>	Not available
<b>Color</b>	Colorless		

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
<b>pH</b>	Not available	
<b>Melting point / freezing point</b>	-39°C / -38.2°F	
<b>Initial boiling point and boiling range</b>	-6°C / 21.2°F	
<b>Flash point</b>	No data available	
<b>Evaporation Rate</b>	Not available	
<b>Flammability (Solid, Gas)</b>	Not determined	
<b>Flammability Limit in Air</b>		
<b>Upper flammability or explosive limits</b>	No data available	
<b>Lower flammability or explosive limits</b>	No data available	
<b>Vapor Pressure</b>	2052 mmHg @21.1°C (69.98°F)	
<b>Vapor Density</b>	7.33	(Air=1)
<b>Relative Density</b>	Not determined	
<b>Water Solubility</b>	0.014%	
<b>Solubility in other solvents</b>	Soluble: ether	
<b>Partition Coefficient</b>	Not determined	
<b>Autoignition temperature</b>	Not available	
<b>Decomposition temperature</b>	Not available	
<b>Kinematic viscosity</b>	0.012 cP	(@25°C/77°F)
<b>Dynamic Viscosity</b>	Not determined	
<b>Explosive Properties</b>	Not determined	
<b>Oxidizing Properties</b>	Not determined	

### Other information

<b>Bulk density</b>	8.66 g/L @21°C (69.8°F)
---------------------	-------------------------

## 10. STABILITY AND REACTIVITY

### Reactivity

Not reactive under normal conditions.

### Chemical stability

Stable under recommended storage conditions.

### Possibility of hazardous reactions

None under normal processing.

<b>Hazardous Polymerization</b>	Will not polymerize.
---------------------------------	----------------------

### Conditions to Avoid

Protect from physical damage and heat.

### Incompatible materials

Metals.

### Hazardous decomposition products

Halogenated compounds. Oxides of carbon.

## 11. TOXICOLOGICAL INFORMATION

### Information on likely routes of exposure

#### Product Information

<b>Eye Contact</b>	Avoid contact with eyes.
<b>Skin Contact</b>	Avoid contact with skin.
<b>Inhalation</b>	Do not inhale.
<b>Ingestion</b>	Do not ingest.

### Component Information

Not determined

### Symptoms related to the physical, chemical and toxicological characteristics

<b>Symptoms</b>	Please see section 4 of this SDS for symptoms.
-----------------	--

### Delayed and immediate effects as well as chronic effects from short and long-term exposure

<b>Carcinogenicity</b>	Based on the information provided, this product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.
------------------------	---

### Numerical measures of toxicity

The following values are calculated based on chapter 3.1 of the GHS document Not determined.

## 12. ECOLOGICAL INFORMATION

### Ecotoxicity

The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

### Component Information

Not available

### Persistence/Degradability

Not determined.

### Bioaccumulation

There is no data for this product.

### Mobility

Not determined

### Other adverse effects

Not determined

### 13. DISPOSAL CONSIDERATIONS

#### Waste Treatment Methods

##### **Disposal of Wastes**

Disposal should be in accordance with applicable regional, national and local laws and regulations.

##### **Contaminated Packaging**

Disposal should be in accordance with applicable regional, national and local laws and regulations.

### 14. TRANSPORT INFORMATION

#### Note

Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances.

#### DOT

UN/ID No UN1976  
 Proper Shipping Name Octafluorocyclobutane  
 Transport hazard class(es) 2.2

#### IATA

UN number or ID number UN1976  
 Proper Shipping Name Octafluorocyclobutane  
 Transport hazard class(es) 2.2

#### IMDG

UN number or ID number UN1976  
 Proper Shipping Name Octafluorocyclobutane  
 Transport hazard class(es) 2.2

### 15. REGULATORY INFORMATION

#### International Inventories

Chemical name	TSCA	TSCA Inventory Status	DSL/NDSL	EINECS/ELI NCS	ENCS	IECSC	KECL	PICCS	AICS
Octafluorocyclobutane	X	ACTIVE	X	X	X	X		X	X

#### **Legend:**

*TSCA - United States Toxic Substances Control Act Section 8(b) Inventory*  
*DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List*  
*EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances*  
*ENCS - Japan Existing and New Chemical Substances*  
*IECSC - China Inventory of Existing Chemical Substances*  
*KECL - Korean Existing and Evaluated Chemical Substances*  
*PICCS - Philippines Inventory of Chemicals and Chemical Substances*  
*AICS - Australian Inventory of Chemical Substances*

#### US Federal Regulations

##### CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355).

**SARA 311/312 Hazard Categories**

Acute health hazard	Yes
Chronic Health Hazard	No
Fire hazard	No
Sudden Release of Pressure Hazard	Yes
Reactive Hazard	No

**SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

**CWA (Clean Water Act)**

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

**US State Regulations**

**California Proposition 65**

This product does not contain any Proposition 65 chemicals.

**U.S. State Right-to-Know Regulations**

Chemical name	New Jersey	Massachusetts	Pennsylvania
Octafluorocyclobutane 115-25-3	X		

**16. OTHER INFORMATION**

<b><u>NFPA</u></b>	<b>Health hazards</b>	<b>Flammability</b>	<b>Instability</b>	<b>Special hazards</b>
	1	0	0	-
<b><u>HMIS</u></b>	<b>Health hazards</b>	<b>Flammability</b>	<b>Physical hazards</b>	<b>Personal Protection</b>
	-	-	-	Not determined

Issue Date: 23-Sep-2021  
 Revision Date: 24-Jun-2024  
 Revision Note: Regulatory review

**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

**End of Safety Data Sheet**