



# MATERIAL SAFETY DATA SHEET

PRODUCT NAME: OCTAFLUOROPROPANE

## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

ASTOR J.S.C.

14, Dobrolubov ave. Saint-Petersburg

197198 Russia

Tel: +7 812 326-15-55

Fax: +7 812 326-15-59

Experimental Plant for Applied Chemistry

Pos.Kuzmolovsky Vsevolozhsky district

Leningradskaya region

Tel./Fax: +7 812 321-68-55

PRODUCT NAME: Octafluoropropane

CHEMICAL NAME: Octafluoropropane

COMMON NAMES/SYNONYMS: Perfluoropropane, R218, FC218, Refrigerant 218

UN HAZARD CLASS: 2.2

UN NUMBER: 1956

## 2. HAZARDS IDENTIFICATION

**Emergency Overview:** This product does not contain oxygen and may cause asphyxia if released in a confined area. Fluorocarbons can cause irritation, central nervous system depression and irregular heart beat at high concentrations. Non-flammable but decomposes to toxic gases, including phosgene, under fire conditions.

**Route of Entry:** Skin Contact – Yes; Skin Absorption – No; Eye Contact – Yes; Inhalation – Yes; Ingestion – No.

**Health Effects:** Exposure Limits – No; Irritant – Yes; Sensitisation – No; Teratogen – No; Reproductive Hazard – No; Mutagen – No; Sinergistic Effects – None Reported.

**Eye Effects:** Persons with potential exposure should not wear contact lenses.

**Skin Effects:** None anticipated as product is a gas at room temperature.

**Ingestion Effects:** Ingestion is not likely.

**Inhalation Effects:** Product is relatively non-toxic. Fluorocarbons can irritate the eyes, mucous membranes and respiratory system. Inhalation of high concentrations may cause dizziness, disorientation, incoordination, narcosis, nausea or vomiting leading to unconsciousness. At high concentrations narcotic effects may be produced and may cause the heart to beat irregularly and stop.

Oxygen deficiency may occur in the presence of high concentrations resulting in asphyxiation. Maintain oxygen levels above 19,5% at sea level.

**Medical Conditions Aggravated by Exposure:** Pre-existing heart condition.

## 3. FIRST AID MEASURES

**Eyes:** Never introduce ointment or oil into the eyes without medical advice! If pain is present refer the victim to an ophthalmologist for treatment and follow up.

**Skin:** Remove contaminated clothing and flush affected areas with lukewarm water. DO NOT USE HOT WATER.

**Ingestion:** Ingestion is unlikely, as product is a gas at room temperature.

**Inhalation:** PROMPT MEDICAL ATTENTION IS MANDATORY IN ALL CASES OF OVEREXPOSURE. RESCUE PERSONNEL SHOULD BE EQUIPPED WITH SELF-CONTAINED BREATHING APPARATUS. Remove victim to fresh air. Administer artificial respiration if breathing has stopped and supplement with oxygen by a trained individual. Further treatment should be symptomatic and supportive. Seek medical attention as soon as possible for follow up treatment. Remove to fresh air. If necessary, give oxygen or provide artificial respiration. Call a physician.

**Note to physician:** A patient adversely affected by exposure to this product should not be given adrenaline (epinephrine) or similar heart stimulant since these would increase the risk of cardiac arrhythmia.

#### 4. FIRE FIGHTING MEASURES

**Conditions of Flammability:** Non-flammable. **Flash Point:** None. **Method:** Not applicable.

**Autoignition Temperature:** None. **Hazardous combustion products:** None. Decomposes to toxic gases at fire temperatures. **Sensitivity to mechanical shock:** None. **Sensitivity to static discharge:** None

**Fire and Explosion Hazards:** If involved in a fire, product may decompose yielding toxic products, which may include hydrofluoric acid and carbonyl fluoride.

**Extinguishing Media:** None required. Use media appropriate for surrounding flammable substances.

**Fire Fighting Instructions:** Positive-pressure, self-contained respiratory equipment for fires involving large quantities of this material.

#### 5. ACCIDENTAL RELEASE MEASURES

Evacuate all personnel from affected area. Use appropriate protective equipment. If leak is in user's equipment, be certain to purge piping with inert gas prior to attempting repairs. If leak is in container or container valve, contact the appropriate emergency telephone number listed in Section 1.

#### 6. HANDLING AND STORAGE

Product is non-corrosive and may be used with any common structural material. Silver and carbon bearing alloys can act as catalysts for decomposing the product at high temperatures. Alloys containing more than 2% magnesium should not be used if water is present.

Use only in well-ventilated areas. Valve protection caps must remain in place unless container is secured with valve outlet piped to use point. Do not drag, slide or roll cylinders. Use a suitable hand truck for cylinder movement. Use a pressure, reducing regulator when connecting cylinder to lower pressure (<300psig) piping or systems. Do not heat cylinder by any means to increase the discharge rate of product from the cylinder. Use a check valve or trap in the discharge line to prevent hazardous back flow into the cylinder. Protect cylinders from physical damage.

Store in a cool, dry, well-ventilated area of non-combustible construction away from heavily trafficked areas and emergency exits. Do not allow the temperature where cylinders are stored to exceed 125 °F (52°C). Cylinders should be stored upright and firmly secured to prevent falling or being knocked over. Full and empty cylinders should be segregated. Use a "First in-first out" inventory system to prevent full cylinders being stored for excessive periods of time. Handle with reasonable care. Store in a cool, dry place.

Never carry a compressed gas cylinder or a container of a gas in cryogenic liquid form in an enclosed space such as a car trunk, van or station wagon. A leak can result in a fire, explosion, asphyxiation or a toxic exposure.

## 7. EXPOSURE CONTROLS, PERSONAL PROTECTION.

**Engineering Controls:** Hood with forced ventilation; provide local exhaust to prevent accumulation above the exposure limit.

**Eye/Face Protection:** None needed as product is a gas at room temperature.

**Skin Protection:** Neoprene rubber gloves.

**Respiratory Protection:** A Type C respirator with full-face piece equipped with an escape bottle or a self-contained breathing apparatus should be available for emergency use. Operate this equipment in the positive pressure demand mode.

**Other/General Protection:** Safety shoes, eyewash "fountain".

## 8. PHYSICAL AND CHEMICAL PROPERTIES

PARAMETER	VALUE	UNITS
Physical state (gas, liquid, solid)	Gas	
Vapor pressure at 70oF	116	psia
Vapor density at 70oF (Air=1)	6.61	
Evaporation point	Not available	
Boiling point	-34.1	°F
	-36.7	°C
Freezing point	-279	°F
	-183	°C
pH	Not available	
Specific gravity	Not available	
Oil/water partition coefficient	Not available	
Solubility (H2O)	Negligible	
Odor threshold	Not available	
Odor and appearance	Colorless gas with a faintly sweet odor.	

## 9. STABILITY AND REACTIVITY

**Stability:** Stable

**Incompatible Materials:** May react violently with chemically active metals such as sodium, potassium and barium, powdered magnesium, powdered aluminum and organometallics.

**Hazardous Decomposition Products:** Decomposes at fire temperatures to hydrochloric and hydrochloric acids, carbonyl fluoride and phosgene.

**Hazardous Polymerization:** Will not occur.

## 10. TOXICOLOGICAL INFORMATION

No chronic effects data given in available literature.

Oxygen deficiency during pregnancy has produced developmental abnormalities in humans and experimental animals.

## 11. ECOLOGICAL INFORMATION

No data given.

## 12. DISPOSAL CONSIDERATIONS

Do not attempt to dispose of residual waste or unused quantities. Return in the shipping container PROPERLY LABELED, WITH ANY VALVE OUTLET PLUGS OR CAPS SECURED AND VALVE PROTECTION CAP IN PLACE to ASTOR or ASTOR's representative for proper disposal.

## 13. TRANSPORT INFORMATION

### PARAMETER

<b>PROPER SHIPPING NAME</b>	Compressed gas (Octafluoropropane)
<b>HAZARD CLASS</b>	2.2
<b>IDENTIFICATION NUMBER</b>	UN 1956
<b>SHIPPING LABEL</b>	NONFLAMMABLE GAS

## 14. OTHER INFORMATION

Compressed gas cylinders shall not be refilled without the express written permission of the owner. Shipment of a compressed gas cylinder which has not been filled by the owner or with his/her (written) consent is a violation of transportation regulations.

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