

FC27-12

2-(HEPTAFLUOROPROPOXY)TETRAFLUOROPROPIONYL FLUORIDE

Revised 16-November-2016

1. IDENTIFICATION OF SUBSTANCE

Product Identifier

Product name	2-(Heptafluoropropoxy)tetrafluoropropionyl fluoride
Catalog number	FC27-12
Brand	Fluoryx Labs
CAS No.	2062-98-8

Relevant identified uses of the Substance or mixture and uses advised against

Identified uses:	Laboratory chemicals; manufacture of substances
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Details of the supplier of the safety data sheet

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2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Classification	Corrosive, irritant, moisture sensitive
GHS Classification	Corrosive, moisture sensitive, respiratory irritant H314; Skin Corr. 1B, R34/34/35 H335; STOT SE 3a

Label Elements**Signal Word:****Pictogram:****Danger****Hazard Statements**

H314

H335

Precautionary Phrases

P280

P301 + P330 + P331

Causes severe skin burns and eye damage.
 May cause respiratory irritation.

Wear protective gloves/protective clothing/eye
 protection/face protection.

IF SWALLOWED: rinse mouth. Do NOT induce
 vomiting.

P303 + P361 + P353

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

P304 + P340

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P305 + P351 + P338

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P501

Dispose of contents/container to local regulations.

Potential Health Effects

Eye Contact: Corrosive, contact causes severe eye burns which may result in permanent tissue and corneal damage.

Skin Contact: Corrosive causes skin burns and severe irritation.

Inhalation: Corrosive. Vapor may be strongly irritating to the respiratory tract.

Ingestion: Risk of internal burns if ingested.

Target Organs: Eyes. Skin. Respiratory system. G.I. Tract.

3. COMPOSITION AND INFORMATION ON INGREDIENTS

Synonyms

2,3,3,3-tetrafluoro-2-(heptafluoropropoxy)propionyl fluoride;
 Propanoyl fluoride, 2,3,3,3-tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-;
 Perfluoro(2-methyl-3-oxahexanoyl) fluoride;
 HFPO dimer;
 Hexafluoropropene oxide dimer;
 Heptafluoropropoxytetrafluoropropionylfluoride;
 Undecafluoro-(2-methyl-3-oxahexanoyl) fluoride;
 2-(Perfluoropropoxy)perfluoropropanoyl fluoride;
 Tetrafluoro-2-(heptafluoro-1-propoxy)propanoyl fluoride

Chemical formula

C₆F₁₂O₂
 CF₃CF₂CF₂OCF(CF₃)C(O)F

Components

Material	CAS #	EINECS #	TSCA Listed
2-(Heptafluoropropoxy)tetrafluoropropionyl fluoride	2062-98-8	218-173-8	Yes

4. FIRST AID MEASURES

Description of First Aid Measures

Ingestion: IF SWALLOWED: rinse mouth. Do NOT induce vomiting.

Inhalation: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

Skin Contact: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

Eye Contact: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Most Important Symptoms and Effects

Symptoms may be delayed. Severe burns may occur.

Indications of Any Immediate Medical Attention

Large exposures can lead to hypocalcemia due to release of hydrogen fluoride upon exposure to moisture. Apply a 2.5% calcium gluconate gel to exposed skin.

5. FIRE FIGHTING MEASURES

Flammable Properties:**Flash point:**

None below the boil

Method:

Closed cup

Extinguishing Media:

Suitable:

Carbon dioxide, dry chemical powder, sand.

Unsuitable:

Do not use water.

Fire fighting instructions:

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin, lungs, and eyes.

Special Hazards:

Corrosive. Emits toxic fumes of hydrogen fluoride (HF) under fire conditions or exposure to water.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions:

Wear respirator, chemical safety goggles, rubber boots, and heavy rubber gloves. If outside keep bystanders upwind and away from danger point. Mark out the contaminated area with signs and prevent access to unauthorized personnel. Do not attempt to take action without suitable protective clothing - see section 8 of SDS. Turn leaking containers leak-side up to prevent the escape of liquid.

Environmental Precautions

Do not discharge to drains or rivers. Do not release into environment.

Clean-Up Procedures:

Clean-up should be dealt with only by qualified personnel familiar with the specific substance. Absorb into dry earth, sand, or vermiculite. Transfer to a closable, labeled salvage container for disposal by an appropriate method.

7. HANDLING AND STORAGE

Personal Precautions:

Avoid direct contact with the substance. Ensure there is sufficient ventilation of the area. Do not handle in a confined space. Avoid the formation or spread of mists in the air. Only use in a fume hood.

Storage Conditions:

Keep tightly closed. Store under inert atmosphere: product reacts with water to produce hydrofluoric acid. Protect from atmospheric moisture. Store at 2 to 8 °C.

Suitable Packaging:

Must only be kept in original packaging.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Engineering Controls:

Safety shower, eye bath, and self-contained breathing apparatus on hand in case of emergency. Mechanical exhaust required.

Personal Protective Equipment**Eye/face protection:**

Chemical safety goggles.

Respirators:

Use organic vapor and acid gas respirators with

components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Protective clothing:

Where there is potential for skin contact, have available and wear as appropriate impervious gloves, apron, pants, and jacket.

Hand protection:

Compatible chemical-resistant gloves.

General hygiene measures:

Wash thoroughly after handling. Wash contaminated clothing before reuse.

9. PHYSICAL AND CHEMICAL PROPERTIES

Molecular Weight	332.04 g/mol
Appearance and Color	Clear colorless liquid
Odor	Acrid odor of hydrogen fluoride
Boiling Point	54 - 56 °C @ 760 mm Hg
Melting Point	Not available
Vapor Pressure	Not available
Vapor Density (Air = 1)	> 1
Saturated Vapor Conc.	Not available
Density	1.61 g/mL @ 25 °C
Flash Point	None below the boil (closed cup)
Explosion Limits	Not available
Refractive Index	$n_D^{25} = 1.3$
Solubility in Water	Reacts with water to produce HF

10. STABILITY AND REACTIVITY

Stability:	Stable in sealed containers under dry, inert atmospheres.
Conditions to Avoid:	Heat, flames, sparks, and moisture.
Materials to Avoid:	Avoid aluminum, strong oxidizing agents, water, alcohols, and strong acids.
Hazardous Decomposition Products:	In combustion, emits toxic fumes including carbon monoxide, carbon dioxide, and hydrogen fluoride.
Hazardous Polymerization Reactions:	Will not polymerize under normal conditions.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity	No data.
Skin corrosion/irritation	Strong corrosive effect on skin and mucous membranes.
Serious eye damage/irritation	Strong corrosive effect.
Respiratory or skin sensitization	No sensitizing effect known.
Germ Cell mutagenicity	Not known.
Carcinogenicity	Not known.
Reproductivity toxicity	Not known.
Aspiration hazard	Not known.
STOT-repeated exposure	Not known.
STOT-single exposure	Not known.

To the best of our knowledge, the acute and chronic toxicity of this substance is not fully known. No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA, or ACGIH.


12. ECOLOGICAL INFORMATION

General:	Take care to prevent chemicals from entering the ground, water courses or drainage systems.
Toxicity:	Toxic to fish.
Persistence and Degradability:	Not known
Bio-Accumulation Potential:	Not known
Mobility in Soil:	Not known
Results of PBT and vPvB Assessment:	Not known
Other Adverse Effects:	Toxic to aquatic organisms including fish, invertebrates, and algae.

13. DISPOSAL CONSIDERATIONS

Disposal Operations:	Carefully hydrolyze material by mixing with basic water and/or alcohol in a hood. This releases hydrofluoric acid which should be neutralized. Alternately, absorb onto clay or vermiculite and dispose of absorbent material as solid waste. Offer unused product to Fluorox. Follow all chemical pollution control regulations.
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14. TRANSPORTATION INFORMATION

Mode	DOT/IMDG/IATA/ICAO
UN Number	3265
Class (Subsidiary)	8
Proper Shipping Name	Corrosive liquid, acidic, organic, n.o.s.
Hazard Label (Subsidiary)	Corrosive liquid
	
Packing Group	II
Shipping Hazard Label	8. Corrosive liquid

15. SAFETY, HEALTH, AND ENVIRONMENTAL REGULATIONS

Safety, Health and Environmental Regulations: Product is not subject to any additional regulations or provisions.

Safety Assessment No chemical safety assessment.

Note: The regulatory information given above only indicates the principal regulations specifically applicable to the product described in the safety data sheet. The user's attention is drawn to the possible existence of additional provisions which complete these regulations. Refer to all applicable national, international and local regulations or provisions.

16. OTHER INFORMATION

HMIS codes:

Health: 3
Flammability: 1
Reactivity: 2

HTN:

2918.99.5000

Legal Disclaimer:

For R&D use only. Not for drug, household, or other uses. The previous information is based upon our current knowledge and experience of our product and is not exhaustive. It applies to the product as defined by the specifications. In case of combinations or mixtures, one must confirm that no new hazards are likely to exist. In any case, the user is not exempt from observing all legal, administrative and regulatory procedures relating to the product, personal hygiene, and integrity of the work environment. Unless noted to the contrary, the technical information applies only to pure product.

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End of SDS