



# Material Safety Data Sheet

## FC13-6500

*1H,1H,5H*-Octafluoropentyl-1,1,2,2-Tetrafluoroethyl Ether

Revised 12-August-2009

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### 1. PRODUCT AND COMPANY IDENTIFICATION

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#### Material Identification

**Product name:** FC13-6500  
**Chemical name:** *1H,1H,5H*-Octafluoropentyl-1,1,2,2-tetrafluoroethyl ether  
**Chemical formula:** HCF<sub>2</sub>CF<sub>2</sub>CF<sub>2</sub>CF<sub>2</sub>CH<sub>2</sub>OCF<sub>2</sub>CF<sub>2</sub>H  
C<sub>7</sub>H<sub>4</sub>F<sub>12</sub>O  
**Synonym:** HFE-6512

#### Company Identification

**Distributor:** **Fluoryx, Inc.**  
20885 Redwood Rd. #347  
Castro Valley, CA 94546  
USA  
**Emergency call:** +86-1346-4812437  
+1-510-329-2811

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### 2. COMPOSITION AND INFORMATION ON COMPONENTS

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Material	Molecular Weight	Molecule Weight Percent	CAS Number
<i>1H,1H,5H</i> -Octafluoropentyl-1,1,2,2-tetrafluoroethyl ether	332.09	> 99 %	16627-71-7

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### 3. HAZARDS IDENTIFICATION

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#### Emergency Overview:

#### Route of Entry:

**Inhalation:** Yes  
**Skin:** Yes  
**Ingestion:** Unlikely

**Potential Effects of Exposure:**

<b>Inhalation:</b>	May have harmful effects if inhaled or swallowed.
<b>Eyes:</b>	Irritating to eyes.
<b>Skin contact:</b>	Irritating to skin, eyes, and respiratory system.
<b>Ingestion:</b>	No data available for humans.
<b>Carcinogenicity:</b>	No data available for humans.

Avoid prolonged exposure.  
Do not breathe vapor.  
Use caution when handling.  
Exposure to any chemical should be limited.  
To the best of our knowledge, the health hazards of this material have not been fully investigated.

**Potential Symptoms of Exposure:**

<b>Main Hazards:</b>	Irritating to eyes, respiratory system and skin.
<b>Skin contact:</b>	Repeated contact may yield dry and chapped skin.
<b>Eye contact:</b>	Irritation.
<b>Ingestion:</b>	May have harmful effects if swallowed.
<b>Inhalation:</b>	May have harmful effects if inhaled.

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**4. FIRST AID MEASURES**

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<b>Inhalation:</b>	Remove victim from source of exposure to fresh air. If breathing is difficult administer oxygen. Seek medical attention.
<b>Eye Contact:</b>	Check for and remove any contact lenses. IMMEDIATELY flush eyes with running water for at least 15 minutes while keeping eyes open. Seek medical attention.
<b>Skin Contact:</b>	After contact with skin, wash with plenty of water. Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap.
<b>Ingestion:</b>	Do not induce vomiting. Give water to victim to drink. Seek medical attention.
<b>If the Subject is Completely Conscious:</b>	Rinse mouth and administer fresh water.
<b>If the Subject is Unconscious:</b>	Not applicable.
<b>Medical Treatment/Notes to Physician:</b>	None.

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**5. FIRE FIGHTING MEASURES**

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<b>Flash Point:</b>	None
<b>Extinguishing Medias:</b>	Carbon dioxide, dry chemical powder, alcohol or polymer foam. Do not use water as extinguishing media.
<b>Specific Hazards:</b>	Emits toxic fumes under fire conditions including

hydrogen fluoride and fluorophosgene.

**Protection of Fire Fighters:**

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

**6. ACCIDENTAL RELEASE MEASURES**

**Personal Precautions:**

Wear appropriate respirator, rubber boots and heavy rubber gloves. If there is skin contact with the chemical, wash immediately with plenty of water. Absorb on sand or vermiculite and place in closed containers for disposal.

**Cleanup Procedures:**

Absorb on sand or vermiculite and place in closed containers for disposal. Scoop up and place in appropriate container. Ventilate area and wash spill site after pickup is complete.

**7. HANDLING AND STORAGE**

**Handling:**

Avoid prolonged use. Avoid all direct contact with material. Wash thoroughly after handling. Do not breathe vapor. Have safety shower and eye wash available. Do not get in eyes, on skin, or on clothing. Keep container tightly closed. Store in a cool, dry, well-ventilated area. Ensure adequate ventilation during use. Use only in a chemical fume hood. Avoid sources of ignition.

**Storage Conditions:**

Store in cool, well-ventilated area. Keep container tightly closed. Keep away from sources of ignition. Avoid contact with water or humidity.

**8. EXPOSURE CONTROLS AND PERSONAL PROTECTION**

**Exposure Limit Values:**

None listed.

**Authorized Limit Values:**

None listed.

**Exposure Controls:**

Follow the protective measures given in Section 7.  
 Provide premise ventilation.  
 Respect local, state, and national regulations for aqueous emissions.

**Occupational Exposure Controls:**

**Ventilation:**

Use only in a chemical fume hood.  
 Follow the protective measures given in section 7.  
 Ensure there is sufficient ventilation of the area.  
 Respect local, state and national regulations for aqueous emissions.

Self-contained breathing apparatus must be available in case of emergency.

**Hand protection:**

Impermeable gloves.

<b>Eye protection:</b>	Safety goggles. Ensure eye wash at hand.
<b>Skin protection:</b>	Impermeable protective clothing.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

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<b>Appearance</b>	Clear liquid
<b>Color</b>	None
<b>Melting Point</b>	-3 °C
<b>Boiling Point</b>	133 °C @ 760 mm Hg
<b>Decomposition Temperature</b>	No data
<b>Flash Point</b>	None
<b>Explosive Properties</b>	Not determined
<b>Vapor Pressure</b>	8 mm Hg @ 25.5 °C
<b>Oxidizing Properties</b>	Not applicable.
<b>Density</b>	1.626 g/m @ 25 °C
<b>Refractive Index</b>	Not determined
<b>Solubility</b>	In water at 23°C < 20 ppm. Fat: No data.
<b>Ozone Depletion Potential</b>	0
<b>Vapor Density (Air = 1)</b>	4.55

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## 10. STABILITY AND REACTIVITY

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<b>Conditions to Avoid:</b>	Heat/sources of heat.
<b>Materials to Avoid:</b>	Strong oxidizing agents. Strong acids.
<b>Hazardous Decomposition Products:</b>	May evolve carbon dioxide, carbon monoxide, and hydrogen fluoride and fluorophosgene.
<b>Hazardous Polymerization:</b>	Will not occur.
<b>Other Information:</b>	The vapor is heavier than air and disperses at ground level.

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## 11. TOXICOLOGICAL INFORMATION

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<b>Acute Toxicity:</b>	
<b>Inhalation:</b>	May be harmful by ingestion and inhalation.
<b>Oral:</b>	No data
<b>Dermal:</b>	No data.
<b>Chronic Toxicity:</b>	To the best of our knowledge, the toxicological properties of this product have not been fully determined. It is recommended that this product be treated as harmful, and is only used by staff trained in the handling of hazardous chemicals.
<b>Carcinogenic Designation:</b>	None.

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**12. ECOLOGICAL INFORMATION**

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<b>Acute Ecotoxicity:</b>	No data.
<b>Chronic Ecotoxicity:</b>	No data.
<b>Degradation</b>	
<b>Abiotic:</b>	
<b>Air, photolysis:</b>	Ozone Depletion Potential: ODP = 0 Reference value for CFC 11: ODP = 1.
<b>Air, greenhouse effect:</b>	No data. Reference value for carbon dioxide: GWP = 1
<b>Biotic:</b>	No data.
<b>Potential for bioaccumulation:</b>	No data.

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**13. DISPOSAL CONSIDERATIONS**

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<b>Waste Treatment:</b>	Arrange disposal as special waste, by licensed disposal company. It is recommended to contact the producer for recycling recovery.
<b>Packaging Treatment:</b>	Arrange for collection by specialized disposal company.
<b>RCRA Hazardous Waste:</b>	Not available

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**14. TRANSPORT INFORMATION**

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<b>Shipping Information:</b>	Not regulated as a hazardous material by DOT, IMO, or IATA.
<b>DOT Proper Shipping Name:</b>	None. Non-hazardous for transport.
<b>UN Number:</b>	None. Non-hazardous for transport.

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**15. REGULATORY INFORMATION**

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<b>National Regulations (US)</b>	
<b>TSCA Inventory 8(b):</b>	No.
<b>SARA Title III Sec. 302/303 Extremely Hazardous Substances (40 CFR 355):</b>	
	No.
<b>SARA Title III Sec. 311/312 (40 CFR 370):</b>	
<b>Hazard Category:</b>	
<b>Threshold Planning Quantity:</b>	10,000 lbs.
<b>SARA Title III Sec. 313</b>	

**Toxic Chemical Emissions Reporting**

**(40 CFR 372):**

No.

**CERCLA Hazardous Substance**

**(40 CFR Part 302)**

**Listed Substance:**

No.

**Unlisted Substance:**

Yes

**Reportable Quantity:**

No.

**Characteristic:**

**State Component Listing:**

**State Comment:**

None identified.

**National Regulations (Canada)**

**Risk Phrases:**

**R36/37/38:**

Irritating to eyes, respiratory system and skin.

**Canadian DSL Registration:**

No.

**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 MSDS