



Material Safety Data Sheet

FC09-08 PERFLUOROCTYL ETHYL TRICHLOROSILANE

Revised 26-November-2009

1. PRODUCT AND COMPANY IDENTIFICATION

Material Identification

Product name: FC09-08
Chemical name: Perfluorooctyl ethyl trichlorosilane
1H, 1H, 2H, 2H-Perfluorodecyltrichlorosilane
Chemical formula: $\text{Cl}_3\text{SiCH}_2\text{CH}_2(\text{CF}_2\text{CF}_2)_4\text{F}$
 $\text{C}_{10}\text{H}_4\text{Cl}_3\text{F}_{17}\text{Si}$

Company Identification

Distributor: **Fluoryx, Inc.**
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Castro Valley, CA 94546
USA
Emergency call: +86-1346-4812437
+1-510-3292811

2. COMPOSITION AND INFORMATION ON INGREDIENTS

Components

Material	CAS #	EINECS #	TSCA Listed
2-(Perfluorooctyl) ethyl trichlorosilane	78560-44-8	Not available	No

3. HAZARDS IDENTIFICATION

Emergency Overview

Hazard: Corrosive/moisture sensitive.
Caution: Causes burns. Avoid contact and inhalation.

For additional information on toxicity, please refer to Section 11.

4. FIRST AID MEASURES

Oral Exposure: Wash out mouth with water. Do not induce vomiting. Give 1 cup of water to drink every 10 minutes. If unconscious, check for breathing and apply artificial respiration if necessary. If unconscious and

breathing is OK, place in the recovery position.
Transfer to hospital as soon as possible.

Inhalation Exposure:

Remove casualty from exposure ensuring one's own safety whilst doing so. If unconscious and breathing is OK, place in the recovery position. If conscious, ensure the casualty sits or lies down. If breathing becomes bubbly, have the casualty sit and provide oxygen if available. Transfer to hospital as soon as possible.

Dermal Exposure:

Remove all contaminated clothes and footwear immediately unless stuck to skin. Drench the affected skin with running water for 10 minutes or longer if substance is still on skin. Transfer to hospital if there are burns or symptoms of poisoning.

Eye Exposure:

Bathe the eye with running water for 15 minutes. Transfer to hospital for specialist examination.

5. FIRE FIGHTING MEASURES

Flammable Properties:

Flash point: > 110 °C
Method: Closed cup

Extinguishing Media: Water spray, carbon dioxide, dry chemical powder, or appropriate foam.

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

Specific hazard(s): Corrosive. Emits toxic fumes under fire conditions.

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.

Clean-Up Procedures:

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

7. HANDLING AND STORAGE

Handling Requirements:

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 fume hood.

Storage Conditions:

Keep tightly closed. Store under inert atmosphere:

product reacts with water. 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	581.56 g/mol
Appearance and Color	Clear to straw liquid with acid odor of hydrogen chloride
Boiling Point	216 to 218 °C @ 760 mm Hg
Melting Point	< 0 °C
Vapor Pressure	< 2 mm Hg @ 25 °C
Vapor Density (Air = 1)	> 1
Saturated Vapor Conc.	Not available
Density	1.70 g/mL @ 25 °C
Flash Point	> 110 °C
Explosion Limits	Not available
Refractive Index	$n_D^{25} = 1.349$
Solubility in Water	Reacts with water

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 strong oxidizing agents, water, alcohols, and strong acids.

Hazardous Decomposition Products:

In combustion, emits toxic fumes including carbon monoxide, carbon dioxide, hydrogen chloride, and hydrogen fluoride.

Hazardous Polymerization Reactions:

Unless protected from moisture, product can polymerize, raising temperature and pressure, possibly rupturing container. Store under inert (dry) atmosphere.

11. TOXICOLOGICAL INFORMATION

OSHA PEL

For hydrogen chloride, TWA: 5ppm.

Oral Toxicity

Rat, LD50: > 5000 mg/kg.

Chronic Toxicity

There are no known chronic effects related to this compound.

Route Of Exposure

Skin contact:

May cause skin irritation.

Eye contact:

May cause eye irritation.

Inhalation:

Material may be irritating to mucous membranes and upper respiratory tract.

Multiple routes:

May be harmful by inhalation, ingestion, or skin absorption.

Signs And Symptoms Of Exposure:

Skin contact:

Blistering may occur. Progressive ulceration will occur if treatment is not immediate. May be immediate or delayed several hours.

Eye contact:

Corneal burns may occur. May cause permanent damage. May be delayed several hours.

Ingestion:

Corrosive burns may appear around the lips. Blood may be vomited. There may be bleeding from the mouth or nose.

Inhalation:

There may be shortness of breath with a burning sensation in the throat. Exposure may cause coughing or wheezing.

12. ECOLOGICAL INFORMATION

General:

Take care to prevent chemicals from entering the ground, water courses or drainage systems.

13. DISPOSAL CONSIDERATIONS

Disposal Operations:

Hydrolyze material by mixing with water in a hood. Aqueous layer contains hydrochloric acid which should be neutralized. Organic layer may be incinerated. Alternately, absorb onto clay or vermiculite and dispose of absorbent material as solid waste.

Follow all chemical pollution control regulations.

14. TRANSPORTATION INFORMATION

Mode

DOT/IMDG/IATA

UN Number

2987

Class (Subsidiary)	8
Proper Shipping Name	Chlorosilanes, corrosive, n.o.s.
Hazard Label (Subsidiary)	Corrosive liquid
Packing Group	II
Shipping Hazard Label	8. Corrosive liquid

15. REGULATORY INFORMATION

Hazard symbols: Corrosive.



Risk phrases: R34: Causes burns.

Safety phrases: S24/25: Avoid contact with skin and eyes.

S36/37/39: Wear suitable protective clothing, gloves and eye / face protection.

S45: In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

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: 1

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