



Chemtrec: (800) 424-9300  
Poison Center: (800) 562-8236  
Revision Date: January 8<sup>th</sup>, 2019

**SAFETY DATA SHEET**

Identity: Cesium Fluoride

Formula: CsF

**SECTION I - GENERAL INFORMATION**

Manufacturer: Super Conductor Materials, Inc.

The information below is believed to be accurate and represents the best information available to Super Conductor Materials, Inc. However, SCM makes no warranty, expressed or implied with respect to such information and assumes no liability resulting from its use.

**SECTION II - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION**

Molecular weight: 151.90

CAS #	OSHA PEL	ACGIH TLV	%
13400-13-0	2.5mg (F)/m3	2.5mg (F)/m3	0.0-100.0%

**SECTION III – PHYSICAL/CHEMICAL CHARACTERISTICS**

Physical States: Solid

Boiling Point: 1251.00°C	Vapor Pressure (vs. air or mmHg): N/A
Melting Point: 682.00°C	Specific Gravity(H <sub>2</sub> O=1): 4.115gm/cc
Evaporation Rate: N/A	Flash Point: N/A
Solubility in water: Very soluble	

*Appearance and odor:* Deliquescent powder and pieces, no odor.

**SECTION IV - FIRE AND EXPLOSION HAZARD DATA:**

*Method Used:* Unknown      *Explosive Limits:* LEL: N/A    UEL: N/A  
*Extinguishing Media:* Use suitable extinguishing media for surrounding materials and type of fire.

*Special Fire Fighting Procedures:*  
Firefighters must wear full face, self-contained breathing apparatus with full protective clothing to prevent contact with skin and eyes. Fumes from fire are hazardous. Isolate runoff to prevent environmental pollution.

*Unusual Fire and Explosion Hazards:*  
When heated to decomposition, cesium fluoride may emit toxic fumes of fluorine.  
Contact with moisture may evolve CsOH and hydrogen fluoride.



SECTION V - REACTIVITY DATA

*Stability:* Stable

*Conditions to Avoid (instability):* None

*Incompatibility:* Water, moisture, benzenediazonium tetrafluoroborate, difluoroamine

*Hazardous Decomposition or Byproducts:* Fumes of fluorine, hydrofluoric acid and CsOH

*Hazardous Polymerization:* Will not occur

*Conditions to avoid (hazardous polymerization):* None

SECTION VI - HEALTH HAZARD DATA

*Route of entry:* Inhalation? Yes    Ingestion? Yes    Eyes? Yes    Skin? Yes    Other? No

To the best of our knowledge the chemical, physical and toxicological properties of cesium fluoride have not been thoroughly investigated and recorded.

Cesium is quite similar to potassium in its elemental state. It has been shown, however, to have pronounced physiological action in experimentation with animals. Hyper-irritability, including marked spasms, has been shown to follow the administration of cesium in amounts equal to the potassium content of the diet. It has been found that replacing potassium in the diet of rats with cesium caused death after 10-17 days. (Sax, Dangerous Properties of Industrial Materials, eighth edition)

Inorganic fluorides are generally highly irritating and toxic. Chronic fluorine poisoning, or “fluorosis”, occurs among miners of cryolite, and consists of sclerosis of the bones, caused by fixation of the calcium by fluorine. There may also be some calcification of the ligaments. The teeth are mottled, and there is osteosclerosis and ostemalacia. Large doses can cause very severe nausea, vomiting, diarrhea, aggravate attacks of asthma and severe bone changes, making normal movements painful. Some signs of pulmonary fibrosis are noted. Some enzyme system effects are reported. Irritants to the eyes, skin and mucous membranes. Loss of weight, anorexia, anemia, wasting and cachexia and dental defects are among the common findings in chronic fluorine poisoning. There may be an eosinophilia and impairment of growth in young workers. Symptoms of intoxication include gastric, intestinal, circulatory, respiratory and nervous complaints and rashes. (Sax, Dangerous Properties of Industrial Materials, eighth edition)

*Signs and Symptoms of Overexposure:*

*Inhalation:* May cause excessive salivation, vomiting, thirst, sweating, colic and diarrhea. Fibrosis may cause: sclerosis of the bones, calcification of ligaments, mottled teeth, osteosclerosis, ostemalacia, loss of weight, anorexia, anemia, wasting, cachia and dental defects.

*Ingestion:* May cause nausea, vomiting, diarrhea, abdominal burning, cramp-like pain, a stiff spine, calcification of ligaments of the ribs and pelvis.

*Skin:* May cause redness, itching and inflammation.

*Eye:* May cause redness, itching, watering and inflammation.

*Health Hazards (Acute and Chronic):*

*Inhalation:*

Acute: DANGER-POISON. May cause irritation to the respiratory tract and mucous membranes. May cause asthma attacks, excessive salivation, thirst, sweating, vomiting, colic, diarrhea and lung granulomas.



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Chronic: May cause fluorosis, pulmonary fibrosis and severe bone changes.

*Ingestion:*

Acute: DANGER-POISON. May cause gastrointestinal irritation, nausea, vomiting, diarrhea and cramp-like pains.

Chronic: May affect the circulatory, enzyme and nervous system.

*Skin:*

Acute: May cause irritation, rashes and skin granulomas.

Chronic: May cause dermatitis.

*Eye:*

Acute: May cause irritation.

Chronic: No chronic health effects recorded.

*Target Organs:* May affect the skeleton, kidneys, central nervous and respiratory systems.

*Carcinogenicity:* NTP? No IARC Monographs? No OSHA Regulated? No

*Medical Conditions Aggravated by Exposure:* Can cause or aggravate attacks of asthma.

*Emergency and First Aid Procedures:*

*Inhalation:* Remove victim to fresh air, keep warm and quiet, and give oxygen if breathing is difficult; seek medical attention

*Ingestion:* Give 1-2 glasses of milk or water and induce vomiting, seek medical attention. Never induce vomiting or give anything by mouth to an unconscious person

*Skin:* Remove contaminated clothing, brush material off skin, wash affected area with mild soap and water, and seek medical attention if symptoms persist

*Eye:* Flush eyes with lukewarm water, lifting upper and lower eyelids for at least 15 minutes and seek medical attention

SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE

*Steps to be taken in case material is released or spilled:*

Wear appropriate respiratory and protective equipment specified in section VIII. Isolate spill area, provide ventilation and extinguish sources of ignition. Vacuum up spill using a high efficiency particulate absolute (HEPA) air filter and place in a closed container for proper disposal. Take care not to raise dust.

*Waste disposal method:*

Dispose of in accordance with state, local, and federal regulations.

*Hazard Label Information:*

Store in cool, dry area and in tightly sealed container. Wash thoroughly after handling.

SECTION VIII - CONTROL MEASURES

*Protective Equipment Summary (Hazard Label Information):*

NIOSH approved respirator, impervious gloves, safety glasses, clothes to prevent contact.



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### *Ventilation:*

Local Exhaust: To maintain concentration at low exposure levels.

Special: Handle in an inert environment

Mechanical (General): Not recommended.

Other: Handle in an inert gas such as argon

### *Work/Hygienic/Maintenance Practices:*

Implement engineering and work practice controls to reduce and maintain concentration of exposure at low levels. Use good housekeeping and sanitation practices. Do not use tobacco or food in work area. Wash thoroughly before eating or smoking. Do not blow dust off clothing or skin with compressed air.

Please be advised that N/A can either mean Not Applicable or No Data Has Been Established
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