

Material Safety Data Sheet

Identity: Chromium fluoride

Formula: CrF₃

SECTION I - GENERAL INFORMATION

Manufacturer: [Stanford Advanced Materials](#) (SAM)

The information below is believed to be accurate and represents the best information available to SAM. However, SAM makes no warranty, expressed or implied with respect to such information and we assume no liability resulting from its use.

SECTION II - PRODUCT INFORMATION/HAZARDOUS INGREDIENTS

Chemical Family: Metal fluoride
CAS #7788-97-8

Molecular Weight: 108.99

HMIS RATINGS (0-4)

Health: 4 Flammability: 0 Reactivity: 0

Hazardous Components	CAS #	OSHA PEL	ACGIH TLV	%
Chromium Fluoride	7788-97-8	1mg/m ³	0.5 mg/m ³	0.0-100
	NA	2.5mg/m ³	2.5mg/m ³	0.0-100

SECTION III - PHYSICAL/ CHEMICAL CHARACTERISTICS

Boiling Point: 1100.0°C

Specific Gravity (water=1): 3.8 gm/cc

Melting Point: 1000.0°C

Vapor Pressure: NE

Physical States: Solid

Vapor Density: NA

Evaporation Rate: NA

Solubility in Water: Insoluble

% Volatile: NE or NA

Appearance and Odor: Green powder pieces, no odor.

SECTION IV - FIRE AND EXPLOSION DATA

Flash Point: NA Method Used: Non-flammable

Explosive Limits: LEL: NA UEL: NA

Extinguishing Media: USE: Not Applicable. 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, chromium fluoride may emit toxic fume of chromium, chromium oxides and fluorine.

SECTION V - REACTIVITY DATA

Stability: Stable

Conditions to Avoid - Instability: None

Incompatibility - Materials to avoid: Strong oxidizing agents, acids and bases.

Hazardous Decomposition or byproducts: Chromium, chromium oxides and fluorine.

Hazardous Polymerization: Will not occur.

SECTION VI - HEALTH HAZARD DATA

Routes of entry: Inhalation: Yes Skin - Yes Eyes - Yes Ingestion - Yes

Health Hazards (Acute and Chronic):

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

Chromium: Confirmed human carcinogen with experimental tumorigenic data. Human poison by ingestion with gastrointestinal effects.

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, wasting and cachexia and dental effects 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, 8th Edition.)

Inhalation: Acute: Severe irritant and corrosive. May cause asthma attacks, excessive salivation, thirst, sweating, vomiting, colic, diarrhea and lung granulomas.

Chronic: May cause fluorosis, pulmonary fibrosis, severe bone changes, histologic fibrosis of lungs, nasal and/or lung cancer.

Ingestion: Acute: May cause gastrointestinal disorders.

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

Skin: Acute: SEVERE IRRITANT AND CORROSIVE.

Chronic: No chronic health effects recorded.

Eye: Acute: SEVERE IRRITANT AND CORROSIVE.

Chronic: No chronic health effects recorded.

Target Organs: May affect the skeleton, kidneys, eyes, skin, central nervous and respiratory system.

Carcinogenicity: NTP: Yes IARC Monographs: Yes OSHA Regulated: Yes

LD 50/LC 50: No toxicity data reported.

Signs and Symptoms of Exposure:

Inhalation: May cause a red, dry throat, coughing, shortness of breath, ulcers of the upper respiratory tract, excessive salivation, vomiting, sweating, colic and diarrhea. Fibrosis may cause: sclerosis of the bones, calcification of ligaments, mottled teeth, osteosclerosis, osteomalacia, loss of weight, anorexia, wasting, cachia, and diarrhea.

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

Skin: May cause redness, itching, and chemical burns.

Eyes: May cause redness, itching, watering and chemical burns.

Medical Conditions Generally Aggravated by Exposure:

Pre-existing respiratory disorders, pulmonary functions and asthma.

Emergency and First Aid Procedures:

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

Ingestion: Give 1 - 2 glasses of milk or water and induce vomiting; seek medical attention if symptoms persist. 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; seek medical attention if symptoms persist.

Eye: Flush eyes with lukewarm water, lifting upper and lower eyelids, for at least 15 minutes. Seek medical attention if symptoms persist.

Steps To Be Taken In Case Material Is Released or Spilled:

Wear appropriate respiratory and protective equipment specified in Section VIII-control measures. Isolate spill area and provide ventilation. 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 local, state and federal regulations.

Hazard Label Information:

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

Precautions to Be Taken In Handling and Storing: None

SECTION VIII - CONTROL MEASURES

Protective Equipment Summary - Hazard Label Information NIOSH

approved respirator Impervious gloves Safety glasses

Clothes to prevent skin contact

Respiratory Protection (Specify Type):

Ventilation:

Local Exhaust: Local exhaust ventilation may be necessary to control any air contaminants to within their PEL or TLVs

during the use of this product. Special: None

Mechanical (GEN): Good general ventilation is recommended.

Other Protective Clothing or Equipment: Protective gear suitable to prevent contamination

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 and smoking. Do not blow dust off clothing or skin with compressed air.