



Super Conductor Materials, Inc.

391 Spook Rock Industrial Park, Suffern, NY 10901 · 845.368.0240 · www.scm-inc.com

Chemtrec: (800) 424-9300

Poison Center: (800) 562-8236

Revision Date: January 8th, 2019

SAFETY DATA SHEET

Identity: Yttrium Flouride

Formula: YF₃

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: 145.90

CAS #	OSHA PEL	ACGIH TLV	%
13709-49-4	1 mg(Y)/m ³	1 mg(Y)/m ³	0.0-100.0%

SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS

Physical States: Solid

Boiling Point: N/A

Vapor Pressure (vs. air or mmHg): N/A

Melting Point: 1387.00°C

Specific Gravity (Water=1): 4.01 gm/cc

Evaporation Rate: N/A

Flash Point: N/A

Solubility in water: Insoluble/

Soluble in dilute acids

Appearance and odor: White 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 agent for surrounding material 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, or on contact with acid or acid fumes, yttrium fluoride emits highly toxic fluoride fumes, hydrogen fluoride vapors and fluorine gas.

SECTION V - REACTIVITY DATA

Stability: Stable

Conditions to Avoid (instability): None



Incompatibility (Materials to avoid): Acids

Hazardous Decomposition or Byproducts: Fluoride fumes, hydrogen fluoride, fluorine gas and yttrium oxide

Hazardous Polymerization: Will not occur

Conditions to avoid (hazardous polymerization): None

SECTION VI - HEALTH HAZARD DATA

Routes of entry: Inhalation? Yes Ingestion? No Eyes? Yes Skin? Yes Other? No

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

Yttrium is considered a rare earth metal. These metals are moderately to highly toxic. The symptoms of toxicity of the rare earth elements in animals include writhing, ataxia, labored respiration, walking on the toes with arched back and sedation. The rare earth elements exhibit low toxicity by ingestion exposure. However, the intraperitoneal route is highly toxic while the subcutaneous route is poison to moderately toxic. The production of skin and lung granulomas after exposure to them requires extensive protection to prevent such exposure. (Sax, Properties of Industrial Materials, eighth edition)

Inorganic fluorides are generally highly irritating and toxic. Acute effects resulting from exposure to fluorine compounds are due to hydrogen fluoride. Chronic fluorine poisoning, or "fluorosis," occurs among miners of cryolite, and consists of a sclerosis of the bones, caused by fixation of the calcium by the 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, abdominal burning and cramp like pains. Can cause or aggravate attacks of asthma and severe bone changes, making normal movements painful. Fluorides are also 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 skin rashes. (Sax, Dangerous Properties of Industrial Materials)

Signs and Symptoms of Overexposure:

Inhalation: May cause coughing, sneezing, dry throat, and difficulty breathing.

Ingestion: Rare earths may cause: writhing, lack of muscular coordination, and labored respiration.

Fluorides may cause: severe nausea, vomiting, diarrhea, abdominal burning and cramp like pains.

Skin: may cause redness, itching and burning.

Eye: may cause redness, itching, burning and watering.

Health Hazards (Acute and Chronic):

Inhalation:

Acute: may cause irritation to the respiratory system and mucous membrane of the nose and throat.

Chronic: no chronic health effects recorded.

Ingestion:

Acute: no acute health effects recorded.

Chronic: no chronic health effects recorded.



Skin:

Acute: may cause irritation.

Chronic: may cause dermatitis.

Eye:

Acute: may cause irritation and serious injury.

Chronic: no chronic health effects recorded.

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

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

Medical Conditions Aggravated by Exposure: Pre-existing respiratory and skin disorders.

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.

Ventilation:

Local Exhaust: Local exhaust ventilation may be necessary to control any air contaminants to within their PELs or TLVs during the use of this product.

Special: handle in a dry, controlled atmosphere

Mechanical (General): recommended



Super Conductor Materials, Inc.

391 Spook Rock Industrial Park, Suffern, NY 10901 · 845.368.0240 · www.scm-inc.com

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
