



MATERIAL SAFETY DATA SHEET

Manufacturer: Strem Chemicals, Inc
7 Mulliken Way
Newburyport, MA 01950-4098 U.S.A.
www.strem.com

Strem Customer Service (978) 499-1600
CHEMTREC (Emergency Only) (800) 424-9300
Poison Center (800) 562-8236

Section 1: Product Identification

Chemical Name: Thorium(IV) fluoride, anhydrous (99.9%-Th)
Product Number: 93-9002
CAS Registry Number: 13709-59-6
Formula: ThF4
EINECS Number: none
Chemical Family: metal halide
Synonym: Thorium tetrafluoride

Section 2: Composition and Information on Ingredients

Ingredient	CAS Number	Percent	ACGIH (TWA)	OSHA (PEL)
Title Compound	13709-59-6	100%	2.5mg/m3 (as F)	2.5mg/m3 (as F)

Section 3: Hazards Identification

Emergency Overview: Toxic by inhalation and if swallowed. Irritating to skin, eyes and respiratory tract.
Primary Routes of Exposure: Contact with skin and eyes. Inhalation of dust.
Eye Contact: Causes irritation and serious eye damage. Effects may not immediately appear.
Skin Contact: Causes irritation, with redness and pain. Soluble fluoride may be corrosive. Effects may not appear immediately.
Inhalation: Toxic by inhalation. Inhalation of dust will cause severe irritation to the respiratory tract.
Ingestion: Toxic if swallowed. May cause salivation, nausea, vomiting, diarrhea, and abdominal pain.
Acute Health Affects: Toxic by inhalation and if swallowed. Irritating to skin, eyes and respiratory tract.
Chronic Health Affects: Prolonged exposure to hydrolysable fluorine compounds can cause deterioration of bone and tooth structure. Radioactive materials are known carcinogens.
NTP: No
IARC: No
OSHA: No

SECTION 4: First Aid Measures

Eye Exposure: Immediately flush the eyes with copious amounts of water for at least 10-15 minutes. A victim may need assistance in keeping their eye lids open. Get immediate medical attention.
Skin Exposure: Wash the affected area with water. Remove contaminated clothes if necessary. Apply calcium gluconate jelly or water soluble calcium salts as antidote. Seek medical assistance.
Inhalation: Remove the victim to fresh air. Closely monitor the victim for signs of respiratory problems, such as difficulty in breathing, coughing, wheezing, or pain. In such cases seek immediate medical assistance.
Ingestion: Seek medical attention immediately. Keep the victim calm. Give the victim water (only if conscious). Induce vomiting only if directed by medical personnel.



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SECTION 5: Fire Fighting Measures

Flash Point: not applicable
Autoignition Temperature: none
Explosion Limits: none
Extinguishing Medium: None. Material is non-flammable.
Special Fire Fighting Procedures: If this product is involved in a fire, fire fighters should be equipped with a NIOSH approved positive pressure self-contained breathing apparatus and full protective clothing.
Hazardous Combustion and Decomposition Products: If involved in a fire this material may emit corrosive fumes of hydrofluoric acid.
Unusual Fire or Explosion Hazards: No unusual fire or explosion hazards.

SECTION 6: Accidental Release Measures

Spill and Leak Procedures: Small spills can be mixed with powdered sodium bicarbonate, lime, or calcium carbonate and swept up. Avoid raising dust. Spillage in areas not adequately ventilated may require an evacuation of area. Emergency response teams will require self-contained breathing apparatus.

SECTION 7: Handling and Storage

Handling and Storage: Store solid in a tightly sealed container away from moisture. Handle under a dry atmosphere of air or nitrogen. Prolonged exposure to the atmosphere may degrade the product.

SECTION 8: Exposure Controls and Personal Protection

Eye Protection: Always wear approved safety glasses when handling a chemical substance in the laboratory.
Skin Protection: Wear protective clothing and gloves. Consult with glove manufacturer to determine the proper type of glove.
Ventilation: solid may form a toxic fine dust. If possible, handle the solid in an efficient fume hood.
Respirator: If in form of fine dust and ventilation is not available a respirator should be worn. The use of respirators requires a Respirator Protection Program to be in compliance with 29 CFR 1910.134.
Ventilation: solid may form a toxic fine dust. If possible, handle the solid in an efficient fume hood.
Additional Protection: No additional protection required.

SECTION 9: Physical and Chemical Properties

Color and Form: white powdr.
Molecular Weight: 308.03
Melting Point: >900°
Boiling Point: no data
Vapor Pressure: no data
Specific Gravity: 6.32
Odor: none
Solubility in Water: insoluble

SECTION 10: Stability and Reactivity

Stability: hygroscopic
Hazardous Polymerization: no hazardous polymerization
Conditions to Avoid: contact with moisture
Incompatibility: active metals and strong mineral acids
Decomposition Products: Hydrofluoric acid, metal fluorides and metal oxyfluorides



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SECTION 11: Toxicological Information

RTECS Data: No information available in the RTECS files.
Carcinogenic Effects: no data
Mutagenic Effects: no data
Tetratogenic Effects: no data

SECTION 12: Ecological Information

Ecological Information: No information available

SECTION 13: Disposal Considerations

Disposal: Dispose of according to local, state and federal regulations.

SECTION 14: Transportation

Shipping Name (CFR): Radioactive material, excepted pkg-ltd qty of mat.
Hazard Class (CFR): 7
Additional Hazard Class (CFR): NA
Packaging Group (CFR): NA
UN ID Number (CFR): UN# 2910
Shipping Name (IATA): Radioactive material, excepted pkg-ltd qty of mat.
Hazard Class (IATA): 7
Additional Hazard Class (IATA): NA
Packaging Group (IATA): NA
UN ID Number (IATA): UN# 2910

SECTION 15: Regulatory Information

TSCA: Listed in the TSCA inventory.
SARA (Title 313): Not reportable under SARA 313
Second Ingredient: none
Third Ingredient: none

SECTION 16: Other Information

Disclaimer: The information herein is believed to be accurate and reliable as of the date compiled. However, Strem Chemicals, Inc. makes no representation, warranty, or guarantee of any kind with respect to the information contained in this document or any use of the product based on this information.
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