

# SAFETY DATA SHEET: Gadolinium(III) Fluoride

Version: 4.1

Revision Date: 04/03/2020

## Section 1: Identification

### 1.1) Product identifier:

Product Name : Gadolinium(III) fluoride  
Synonyms : Gadolinium Trifluoride  
Product Number : PO2910  
CAS Number : 13765-26-9

### 1.2) Company information:

Address: MSE Supplies, LLC  
4400 E Broadway Blvd, Suite 600  
Tucson, AZ 85711, USA  
Telephone: +1 520-789-6673  
Email: [info@mse-supplies.com](mailto:info@mse-supplies.com)  
Emergency Telephone : +1-703-527-3887

### 1.3) Relevant identified uses of the substance or mixture and uses advised against:

Identifies uses: Laboratory chemicals, Synthesis of substances

## Section 2: Hazard(s) Identification

### 2.1) Classification of the substance or mixture GHS classification in accordance with 29 CFR 1910 (OSHA HCS):

Not a hazardous substance or mixture.

### 2.2) GHS Label elements, including precautionary statements:

Not a hazardous substance or mixture.

### 2.3) Hazards not otherwise classified (HNOC) or covered by GHS:

None

## Section 3: Composition/Information on Ingredients

### 3.1) Substances:

Formula:  $GdF_3$

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Molecular Weight: 214.25 g/mol  
CAS Number: 13765-26-9  
EC number: 237-369-4

Component	Classification	Concentration
Gadolinium(III) fluoride		<=100%

### Section 4: First-Aid Measures

#### 4.1) Description of first aid measures:

##### General advice

Hydrofluoric (HF) acid burns require immediate and specialized first aid and medical treatment. Symptoms may be delayed up to 24 hours depending on the concentration of HF. After decontamination with water, further damage can occur due to penetration/absorption of the fluoride ion. Treatment should be directed toward binding the fluoride ion as well as the effects of exposure. Skin exposures can be treated with a 2.5% calcium gluconate gel repeated until burning ceases. More serious skin exposures may require subcutaneous calcium gluconate except for digital areas unless the physician is experienced in this technique, due to the potential for tissue injury from increased pressure. Absorption can readily occur through the subungual areas and should be considered when undergoing decontamination. Prevention of absorption of the fluoride ion in cases of ingestion can be obtained by giving milk, chewable calcium carbonate tablets or Milk of Magnesia to conscious victims. Conditions such as hypocalcemia, hypomagnesemia and cardiac arrhythmias should be monitored for, since they can occur after exposure.

##### If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration.

##### In case of skin contact

Wash off with soap and plenty of water.

##### In case of eye contact

Flush eyes with water as a precaution.

##### If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water.

#### 4.2) Most important symptoms and effects, both acute and delayed:

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The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11.

### **4.3) Indication of any immediate medical attention and special treatment needed:**

No data available

## Section 5: Fire-Fighting Measures

### **5.1) Suitable extinguishing media:**

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

### **5.2) Special hazards arising from the substance or mixture:**

Hydrogen fluoride, gadolinium oxides

### **5.3) Advise for firefighters:**

Wear self-contained breathing apparatus for firefighting if necessary.

### **5.4) Further information:**

No data available

## Section 6: Accidental Release Measures

### **6.1) Personal precautions, protective equipment, and emergency procedures:**

Avoid dust formation. Avoid breathing vapors, mist or gas.

For personal protection see section 8.

### **6.2) Environmental precautions:**

No special environmental precautions required.

### **6.3) Methods and materials for containment and cleaning up:**

Sweep up and shovel. Keep in suitable, closed containers for disposal.

### **6.4) Reference to other sections:**

For disposal see section 13.

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### Section 7: Handling and Storage

#### 7.1) Precautions for safe handling:

Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.

Provide appropriate exhaust ventilation at places where dust is formed.

For precautions see section 2.2.

#### 7.2) Conditions for safe storage, including any incompatibilities:

Keep container tightly closed in a dry and well-ventilated place.

Keep in a dry place.

Storage class (TRGS 510): 13: Non Combustible Solids

#### 7.3) Specific end use(s):

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

### Section 8: Exposure Controls/Personal Protection

#### 8.1) Control parameters:

##### Components with workplace control parameters

Component	CAS-Number	Value	Control Parameters	Basis
Gadolinium(III) fluoride	13765-26-9	TWA	2.5 mg/m <sup>3</sup>	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
	Remarks	CAS number varies with compound		
		TWA	2.5 mg/m <sup>3</sup>	USA. ACGIH Threshold Limit Values (TLV)
		Bone damage		

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		Fluorosis Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Not classifiable as a human carcinogen varies		
		PEL	2.5 mg/m <sup>3</sup>	California permissible exposure limits for chemical contaminants (Title 8, Article 107)

**Biological occupational exposure limits**

Component	CAS-Number	Parameters	Value	Biological Specimen	Basis
Gadolinium(III) fluoride	13765-26-9	Fluoride	2mg/l	Urin	ACGIH - Biological Exposure Indices (BEI)
	Remarks	Prior to shift (16 hours after exposure ceases)			
		Fluoride	3mg/l	Urin	ACGIH - Biological Exposure Indices (BEI)
		End of shift (As soon as possible after exposure ceases)			

**8.2) Exposure controls:**

**Appropriate engineering controls:**

General industrial hygiene practice.

**Personal protective equipment**

**Eye/face protection:**

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**Skin protection:**

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

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### Body protection:

Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

### Respiratory protection:

Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

### Control of environmental exposure:

No special environmental precautions required.

## Section 9: Physical and Chemical Properties

### 9.2) Information on basic physical and chemical properties:

a) Appearance (physical state, color, etc.)	White powder
b) Upper/lower flammability or explosive limits	No data available
c) Odor	No data available
d) Odor threshold	No data available
e) Vapor pressure	No data available
f) Vapor density	No data available
g) pH	No data available
h) Density	7.1 g/cm <sup>3</sup>
i) Melting point/freezing point	1,231°C
j) Solubility(ies)	No data available
k) Initial boiling point and boiling range	No data available
l) Flash point	No data available

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m) Evaporation rate	No data available
n) Flammability (solid, gas)	No data available
o) Partition coefficient: n-octanol/water	No data available
q) Auto-ignition temperature	No data available
r) Decomposition temperature	No data available
s) Viscosity	No data available
t) Explosive properties	No data available
u) Oxidizing properties	No data available

### 9.2) Other Safety information:

No data available

## Section 10: Stability and Reactivity

### 10.1) Reactivity:

No data available

### 10.2) Chemical Stability:

Stable under recommended storage conditions.

### 10.3) Possibility of hazardous reactions:

No data available

### 10.4) Conditions to avoid:

No data available

### 10.5) Incompatible materials:

No data available

### 10.6) Hazardous decomposition products:

Hazardous decomposition products formed under fire conditions. - Hydrogen fluoride, gadolinium oxides

Other decomposition products - No data available

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In the event of a fire: see section 5.

### Section 11: Toxicological Information

#### 11.1) Information on toxicological effects:

**Acute toxicity:**

No data available

**Skin corrosion/irritation:**

No data available

**Serious eye damage/ eye irritation:**

No data available

**Respiratory or skin sensitization:**

No data available

**Germ cell mutagenicity:**

No data available

**Carcinogenicity:**

**IARC:** No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

**NTP:** No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

**OSHA:** No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

**Reproductive toxicity:**

No data available

**Specific target organ toxicity – single exposure:**

No data available

**Specific target organ toxicity – repeated exposure:**

No data available



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**Aspiration hazard:**

No data available

**Additional information:**

RTECS: Not available

Fluoride ion can reduce serum calcium levels possibly causing fatal hypocalcemia.

Salivation, Nausea, Vomiting, Fever, Cough, Shortness of breath, Headache

### Section 12: Ecological Information

**12.1) Toxicity:**

No data available

**12.2) Persistence and degradability:**

No data available

**12.3) Bioaccumulative potential:**

No data available

**12.4) Mobility in soil:**

No data available

**12.5) Results of PBT and vPvB assessment:**

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

**12.6) Other adverse effects:**

No data available

### Section 13: Disposal Considerations

**13.1) Waste treatment methods:**

**Product:**



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Offer surplus and non-recyclable solutions to a licensed disposal company.

**Contaminated packaging:**

Dispose of as unused product.

## Section 14: Transport Information

**DOT (US):**

Not dangerous goods

**IMDG:**

Not dangerous goods

**IATA:**

Not dangerous goods

## Section 15: Regulatory Information

**SARA 302 Components:**

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**SARA 313 Components:**

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**SARA 311/312 Hazards:**

No SARA Hazards

**Massachusetts Right To Know Components:**

No components are subject to the Massachusetts Right to Know Act.

**Pennsylvania Right To Know Components:**

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### New Jersey Right To Know Components:

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### California Prop. 65 Components:

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

## Section 16: Other Information

### Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. MSE Supplies LLC and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product.

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