

**1. PRODUCT AND COMPANY IDENTIFICATION**

**Trade Name:** Gadolinium Fluoride

**Chemical Formula:** GdF<sub>3</sub>

**Manufacturer Item Number:** GA-1920

**Manufacturer:** Lorad Chemical Corporation  
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Saint Petersburg, Florida, 33713  
United States of America

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**2. HAZARD IDENTIFICATION**

**Signal Word:** Warning

**Pictograms:**



**Hazard Statements:** H315 Cause skin irritation.  
H319 Causes serious eye irritation.  
H335 May cause respiratory irritation.

**Precautionary Statements:** P261 Avoid breathing dust / fume / gas / mist / vapors / spray.  
P264 Wash face, hands, and any exposed skin thoroughly after handling.  
P280 Wear protective gloves / protective clothing / eye protection / face protection.  
P305+351+338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P304+340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
P301+330+331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.  
P405 Store locked up.  
P501 Dispose of contents / container in accordance with local / regional / national / international regulation.

**HMIS Health Ratings (0-4)**

- Health: 1  
- Flammability: 0  
- Physical: 1

**3. COMPOSITION**

**Additional Names:** Gadolinium(III) Fluoride; Gadolinium Trifluoride

**Percentage:** 100 wt%

**CAS #:** 13765-26-9

EC #: 237-369-4

**4. FIRST AID PROCEDURES**

<b>General Treatment</b>	Consult a physician. Show this SDS to the doctor in attendance. Move out of dangerous area.
<b>Special Treatment:</b>	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 towards 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 until 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.
<b>Important Symptoms:</b>	Conditions such as hypocalcemia, hypomagnesemia, and cardiac arrhythmias should be monitored for, since they can occur after exposure.
<b>Inhalation:</b>	If breathed in, move person to fresh air. If not breathing give artificial respiration. Consult a physician.
<b>Ingestion:</b>	Never give anything by mouth to an unconscious person. Rinse mouth with water. Ingest soluble calcium in any form such as milk, calcium gluconate solution, calcium lactate solution, or tablets of calcium carbonate. Consult a physician.
<b>Skin:</b>	Wash off with soap and plenty of water. Consult a physician. First treatment with calcium gluconate paste.
<b>Eyes:</b>	Flush eyes with water as a precaution.

**5. FIREFIGHTING MEASURES**

<b>Flammability:</b>	Not Flammable.
<b>Special Hazards from Substance:</b>	Gadolinium Oxide, Hydrogen Fluoride
<b>Extinguishing Media:</b>	Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide.
<b>Special Fire Fighting Procedures:</b>	Wear self-contained breathing apparatus for firefighting if necessary.

**6. ACCIDENTAL RELEASE MEASURES**

<b>If Material is Released / Spilled:</b>	Wear appropriate respiratory and protective equipment specified in special protection information. Avoid dust formation. Avoid breathing dust, vapors, mist, or gas. Isolate spill area and provide ventilation. Evacuate personnel to safe areas. Pick up and arrange disposal without creating dust. Sweep up and shovel. Do not flush with water. Keep in suitable closed containers for disposal.
<b>Environmental Precautions:</b>	Prevent further leakage or spills if safe to do so. Do not allow to enter drains, sewers, or watercourses.

**7. HANDLING AND STORAGE**

<b>Handling Conditions:</b>	Avoid formation of dust and aerosols. 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.
<b>Storage Conditions:</b>	Keep container tightly closed in a dry and well-ventilated place.

**SAFETY DATA SHEET**

**Work / Hygienic Maintenance:** 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.

**Ventilation:** Provide appropriate exhaust ventilation at places where dust is formed.

**8. EXPOSURE CONTROLS AND PERSONAL PROTECTION**

Permissible Exposure Limits:	Authority	Basis	Limit	Remarks
	ACGIH	BEI	3.0 mg/g	Fluorides in urine prior to shift (16 hours after exposure ceases)
	ACGIH	BEI	10.0 mg/g	Fluorides in urine end of shift (as soon as possible after exposure ceases)
	ACGIH	BEI	2.0 mg/l	Fluorides in urine prior to shift (16 hours after exposure ceases)
	ACGIH	BEI	3.0 mg/l	Fluorides in urine end of shift (as soon as possible after exposure ceases)
	California	PEL	2.50 mg/m <sup>3</sup>	Fluorides - California permissible exposure limit for chemical contaminants (Title 8, Article 107) (8 hour STEL)
Threshold Limit Value:	Authority	Basis	Limit	Remarks
	OSHA	OEL	2.50 mg/m <sup>3</sup>	Fluorides (as F) - USA Occupational Exposure Limit (Table Z-2)
	OSHA	OEL	2.50 mg/m <sup>3</sup>	Fluoride as dust - USA Occupational Exposure Limit (air contaminant) (Table Z-1)
	ACGIH	TLV	2.50 mg/m <sup>3</sup>	Bone damage. Fluorosis. Substance for which there is a biological exposure index. Not classifiable as human carcinogen.

**Special Equipment:** No Data Available.

**Respiratory Protection:** Respiratory protection is not required but is recommended. Where protection from nuisance levels of dust 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).

**Protective Gloves:** Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching the 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.

**Eye Protection:** Face shield and safety glasses. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU).

**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.

**9. PHYSICAL AND CHEMICAL CHARACTERISTICS**

<b>Color:</b>	White	<b>Molecular Weight:</b>	214.25 g/mol
<b>Forms:</b>	Powder, Granules	<b>Density:</b>	7.0 g/cm <sup>3</sup> at 20°C
<b>Odor:</b>	No Data Available.	<b>pH:</b>	No Data Available.
<b>Water Solubility:</b>	Mostly Insoluble 2.9 – 4.8 gm/l at 20°C	<b>Auto-ignition Temperature:</b>	No Data Available.

**SAFETY DATA SHEET**

<b>Boiling Point:</b>	No Data Available.	<b>Evaporation Rate:</b>	No Data Available.
<b>Melting Point / Freezing Point:</b>	> 1,231°C (> 2,248°F)	<b>Flammability or Explosive Limits:</b>	No Data Available.
<b>Vapor Pressure:</b>	No Data Available.	<b>Partition Coefficient: n-octanol/ water</b>	No Data Available.
<b>Vapor Density:</b>	No Data Available.	<b>Decomposition Temperature:</b>	No Data Available.
<b>Flash Point:</b>	No Data Available.	<b>Viscosity:</b>	No Data Available.

**10. REACTIVITY**

<b>Stability:</b>	Stable under recommended storage conditions.
<b>Reacts with:</b>	No Data Available.
<b>Incompatible Conditions:</b>	No Data Available.
<b>Hazardous Decomposition Products:</b>	Hazardous decompositions products that may form under fire conditions include Hydrogen Fluoride and Gadolinium Oxides.

**11. TOXICOLOGICAL INFORMATION**

<b>Potential Health Effects:</b>	Eyes:	May cause irritation.
	Skin:	Prolonged or repeated contact may lead to irritation.
	Ingestion:	Can cause diffuse abdominal pain, diarrhea, vomiting, excessive salivation, thirst, perspiration, painful spasms of the limbs in some cases, albuminuria. Hypocalcemia at high doses.
	Inhalation:	Acute overexposure can cause respiratory tract irritation and nausea.
	Chronic:	Fluoride ion can reduce serum calcium levels possibly causing fatal hypocalcemia. Also may lead to excessive calcification of the bones, teeth, ligaments, and tendons.
<b>Signs and Symptoms:</b>	Burning sensation, cough, wheezing, laryngitis, shortness of breath, headache, nausea, vomiting, salivation, abdominal pain, fever, breathing difficulties.	
<b>Aggravate Medical Conditions:</b>	Respiratory diseases.	
<b>Median Lethal Dose:</b>	No Data Available.	
<b>Carcinogen:</b>	IARC:	No component of this product present at levels greater than or equal to 0.1% is identified as probable or confirmed human carcinogen by IARC.
	ACGIH:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
	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 identified as a carcinogen or potential carcinogen by OSHA.

**12. ECOLOGICAL INFORMATION**

<b>Aquatic Toxicity:</b>	No Data Available.
<b>Persistence and degradability:</b>	No Data Available.

**Bioaccumulative potential:** No Data Available.

**Notes:** No Data Available.

### 13. DISPOSAL CONSIDERATIONS

**Disposal:** Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Empty containers should be taken to an appropriate waste handling site for recycling or disposal. Dispose of in accordance with local, state, or national regulations.

### 14. TRANSPORTATION DATA

**Hazardous:** **DoT:** Not Dangerous Goods.  
**IMDG:** Not Dangerous Goods.  
**IATA:** Not Dangerous Goods.

**Pictogram:** N/A

**Hazard Class:** N/A

**Packing Group:** N/A

**UN Number:** N/A

**Proper Shipping Name:** **DoT:** N/A

**IMDG:** N/A

**IATA:** N/A

### 15. REGULATORY INFORMATION

**SARA 302 Components** No chemicals in this material are subjects 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 Ma. Right to Know Act.

**Pennsylvania Right to Know Components** Gadolinium Fluoride (CAS No. 13765-26-9).

**New Jersey Right to Know Components** Gadolinium Fluoride (CAS No. 13765-26-9).

**California Prop. 65 Components** This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

### 16. OTHER INFORMATION

Copyright 2018 Lorad Chemical Corporation. 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 does not constitute a hazard assessment and should not be used in place of the user's own assessment of work place risks as required by other health and safety legislation. The information in this sheet does not represent a guarantee of the properties of the product. Lorad Chemical Corporation and its Affiliates make no warranty with respect to the accuracy of the information or the suitability of this product for any particular application, and shall not be held liable for any damage resulting from handling or from contact with the above product.

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