

1. PRODUCT AND COMPANY IDENTIFICATION

Trade Name: Lithium Fluoride

Chemical Formula: ${}^6\text{LiF}$

Manufacturer Item Number: LI-2850

Manufacturer: Lorad Chemical Corporation
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2. HAZARD IDENTIFICATION

Signal Word: Danger

Pictograms:



Hazard Statements:

H301 Toxic if swallowed.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
H361 Suspected of damaging fertility or the unborn child.
H362 May cause harm to breast-fed children.

Precautionary Statements:

P202 Do not handle until all safety precautions have been read and understood.
P260 Do not breathe dust / fume / gas / mist / vapors / spray.
P263 Avoid contact during pregnancy / while nursing.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink, or smoke when using this product.
P280 Wear eye protection / face protection / protective gloves / protective clothing.
P281 Use personal protective equipment as required.
P301+310 IF SWALLOWED: Immediately call a POISON CENTER / doctor.
P304+340+312 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor / physician if you feel unwell.
P305+351+338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+313 If exposed or concerned: Get medical advice / attention.
P330 Rinse mouth.
P332+313 If skin irritation occurs: Get medical advice / attention.
P337+313 If eye irritation persists: Get medical advice / attention.
P405 Store locked up.
P422 Store contents under inert gas.
P501 Dispose of contents / container to an approved waste disposal plant.

HMIS Health Ratings (0-4)

- Health:	2
- Flammability:	0
- Physical:	0

3. COMPOSITION

Additional Names: ⁶LiF; Lithium-6 Fluoride

Percentage: 100% wt

CAS #: 14885-65-5

EC #: 238-958-9

4. FIRST AID PROCEDURES

General Treatment Consult a physician. Show this SDS to the doctor in attendance. Move out of dangerous area.

Special Treatment: Hydrofluoric (HF) acid burns require immediate and specialized first 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 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.

Important Symptoms: No Data Available.

Inhalation: If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

Ingestion: Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician. If possible, drink milk afterwards.

Skin: Wash off with soap and plenty of water. Consult a physician. First treatment with calcium gluconate paste.

Eyes: Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

5. FIREFIGHTING MEASURES

Flammability: Non-flammable.

Special Hazards from Substance: Hydrogen Fluoride, Lithium Oxides

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

Special Fire Fighting Procedures: Wear self-contained breathing apparatus for firefighting if necessary.

6. ACCIDENTAL RELEASE MEASURES

If Material is Released / Spilled: Wear appropriate respiratory and protective equipment specified in special protection information. Isolate spill area and provide ventilation. Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

Environmental Precautions: Prevent further leakage or spills if safe to do so. Do not allow to enter drains, sewers, or watercourses.

7. HANDLING AND STORAGE

Handling Conditions: Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed.

Storage Conditions: Keep container tightly closed in a dry and well-ventilated place. Keep in a dry place under inert gas, material is hygroscopic.

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 ³	Fluorides - California permissible exposure limit for chemical contaminants (Title 8, Article 107) (8-hour time weighted average)

Threshold Limit Value:	Authority	Basis	Limit	Remarks
	OSHA	OEL	2.50 mg/m ³	Fluorides (as F) - USA Occupational Exposure Limit (Table Z-2)
	OSHA	OEL	2.50 mg/m ³	Fluoride as dust - USA Occupational Exposure Limit (air contaminant) (Table Z-1)
	ACGIH	TLV	2.50 mg/m ³	Bone damage. Fluorosis. Substance for which there is a biological exposure index. Not classifiable as human carcinogen.

Special Equipment: Engineer environmental controls to ensure adequate ventilation and avoid contact with skin, eyes, and clothing. Wash hands thoroughly before breaks and immediately after handling the product.

Respiratory Protection: Where risk assessment shows air-purify respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. 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: Complete suit protecting against chemicals. 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

Color:	White	Molecular Weight:	25.94 g/mol
Forms:	Solid	Density:	2.64 g/cm ³
Odor:	No Data Available.	pH:	No Data Available.
Water Solubility:	0.13 g/100 mL (25°C)	Auto-Ignition Temperature:	No Data Available.
Boiling Point:	> 1,680°C (> 3,056°F)	Evaporation Rate:	No Data Available.
Melting Point / Freezing Point:	> 848°C (> 1558°F)	Flammability or Explosive Limits:	No Data Available.
Vapor Pressure:	No Data Available.	Partition Coefficient: n-octanol/ water	No Data Available.
Vapor Density:	No Data Available.	Decomposition Temperature:	No Data Available.
Flash Point:	No Data Available.	Viscosity:	No Data Available.

10. REACTIVITY

Stability:	Stable under recommended storage conditions.
Reacts with:	No Data Available.
Incompatible Conditions:	Strong Oxidizing Agents, Strong Acids
Hazardous Decomposition Products:	Hazardous decomposition products formed under fire conditions includes Lithium Oxides, Hydrogen Fluoride

11. TOXICOLOGICAL INFORMATION

Acute Toxicity	Eyes:	May cause irritation.
	Skin:	May cause irritation.
	Ingestion:	May cause salivation, nausea, vomiting, fever.
	Inhalation:	May cause respiratory irritation on inhalation. May cause salivation, nausea, vomiting, or fever.
Chronic Toxicity	Skin Corrosion / Irritation:	No Data Available.
	Serious Eye Damage / Irritation:	May cause serious eye irritation.
	Respiratory / Skin Sensitization:	No Data Available.
	Mutagenic Effects:	No Data Available.
	Reproductive / Teratogenic Effects:	Lithium and its compounds are possible teratogenic by analogy to lithium carbonate which has equivocal human teratogenic data and positive animal teratogenic data. Fluoride has been shown to have effects on or via lactation and is a suspected human reproductive toxicant.

Specific Target Organ Toxicity: (single exposure) Fluorides may cause salivation, nausea, vomiting, diarrhea, and abdominal pain, followed by weakness, tremors, shallow respiration, convulsions, and coma. May cause brain and kidney damage. Fluoride ion can reduce serum calcium levels possibly causing fatal hypocalcemia.

Large doses of lithium ion have caused dizziness and prostration, and can cause kidney damage if sodium intake is limited. Dehydration, weight loss, dermatological effects, and thyroid disturbances have been reported. Central nervous system effects that include slurred speech, blurred vision, sensory loss, ataxia, and convulsions may occur.

Specific Target Organ Toxicity: (repeated exposure) Chronic fluoride poisoning can cause severe bone changes, loss of weight, anorexia, anemia, and dental defects. Fluoride ion can reduce serum calcium levels possibly causing fatal hypocalcemia.

Diarrhea, vomiting, and neuromuscular effects such as tremor, clonus, and hyperactive reflexes may occur as a result of repeated exposure to lithium ion.

Aspiration Hazard: No Data Available.

Other Adverse Effects: To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Carcinogenicity:

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

Aquatic Toxicity: No Data Available.

Persistence and degradability: 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:** Hazardous for Transportation
IMDG: Hazardous for Transportation
IATA: Hazardous for Transportation

Pictogram:



Hazard Class: 6.1 Toxic

Packing Group: III

UN Number: UN3288

US DoT **Proper Name:** Toxic solid, inorganic, n.o.s. (Lithium-6 Fluoride)

Poison Inhalation Hazard: No

IMDG **Proper Name:** TOXIC SOLID, INORGANIC, N.O.S. (Lithium-6 Fluoride)

EMS-No: F-A, S-A

IATA **Proper Name:** Toxic solid, inorganic, n.o.s. (Lithium-6 Fluoride)

15. REGULATORY INFORMATION

SARA 302 Components	No chemical 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 minimus) reporting levels established by SARA Title III, Section 313.
SARA 311/312 Hazards	Acute Health Hazard, Chronic Health Hazard
Massachusetts Right to Know Components	No components are subject to the Ma. Right to Know Act.
Pennsylvania Right to Know Components	Lithium-6 Fluoride (CAS No. 14885-65-5)
New Jersey Right to Know Components	Lithium-6 Fluoride (CAS No. 14885-65-5)
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 2019 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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