

SAFETY DATA SHEET

LITHIUM FLUORIDE

1. Identification of the Substance/Mixture and of the Company/Undertaking:

- 1.1 **Product Identifier:** Lithium fluoride
- 1.1.1 **Substances** Lithium fluoride
- 1.1.1 **Alternate names and trade name** Lectro® Lyte 700 Salt
- 1.1.2 **Mixture name:** Not applicable
- 1.2 **Relevant Identified Uses of the Substance or Mixture and Uses Advised Against:**
 Formulation and chemical synthesis in industrial manufacturing operations.
 Additive for preparations and articles for industrial and consumer use;
 Do not use for private purposes (household).

1.3 **Details of the Supplier of the Safety Data Sheet**

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 FMC Corporation
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 Charlotte, NC 28208
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 Fax: +1.704.426.5370
 1.888.lithium

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 FMC Chemicals
 Commercial Road
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 FMC Asia Innovation Center
 No 3 Building No. 4560
 Jinke Road
 Shanghai, China 201203
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Email: lithium.info@fmc.com
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1.4 **Emergency Telephone Number:**

North America
CHEMTEC: +1.800.424.9300
 +1.703.527.3887
Plant: +1.704.629.5361
Medical: +1.303.595.9048

Europe
24 hr Specialist advice number:
CHEMTEC: +44 870 8200418

Asia Pacific
 Phone: +86.21.2067.5888

2. Hazards Identification

2.1 **Classification of the Substance or mixture:**
2.1.1 GHS Classification [EC Regulation No 1272/2008 and US OSHA regulations]

Acute Toxicity, Category 4
 Eye Irritant, Category 2

2.2.2 EC: Classification according to 67/548/EEC or 1999/45/EC [DSD/DPD]

Xn, R22; Xi, R36

2.2 **Label Elements:**

2.2.3 Hazard Pictograms(s):



2.2.4 Signal Word:

Warning

Hazard Statement(s):

Harmful if swallowed H302
 Causes serious eye irritation H319

Precautionary Statement(s):

Wear protective gloves/protective clothing/eye protection/face protection. P280
 IF IN EYES: Rinse cautiously w/ water for several minutes. Remove P305 + P351 + P338
 contact lenses, if present and easy to do. Continue rinsing.
 If eye irritation persists: Get medical advice/attention. P337 + P313
 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel P301 + P312
 unwell.
 Rinse mouth. P330
 Wash hands thoroughly after handling. P264

Additional Precautionary Statement(s):

Do not eat, drink or smoke when using this product. P270
 Dispose of contents/ container to an approved waste disposal plant. P501

2.3 **Other Hazards**

None.

3. Composition / Information on Ingredients

3.1 Substances

3.1.1 GHS Classification [EC: Regulation No 1272/2008; US: OSHA regulations]

Chemical Name	CAS #	EC No	EC Index No	REACH Reg No	Wt. %	Classification, Hazard Statement Codes	
Lithium fluoride	7789-24-4	232-152-0	not avail.	not available	100	Acute Tox. 4 Eye Irrit. 2	H302 H319

3.1.2 EC: Classification according to 67/548/EEC or 1999/45/EC [DSD/DPD]

Chemical Name	CAS #	EC No	Wt. %	Symbols	R-phrases
Lithium fluoride	7789-24-4	232-152-0	100	Xn Xi	R22 R36

3.2 Mixtures Not applicable.

(see Section 16 for R-phrases text)

4. First Aid Measures

4.1 Description of First Aid Measures

EYES: Flush with water for at least 15 minutes. If irritation occurs and persists, contact a medical doctor.

SKIN: Wash with plenty of soap and water. Get medical attention if irritation occurs and persists.

INGESTION: Drink 1 or 2 glasses of water. Never give anything by mouth to an unconscious person. If any discomfort persists, obtain medical attention.

INHALATION: Remove to fresh air. If breathing difficulty or discomfort occurs and persists, contact a medical doctor.

4.2 Most Important Symptoms and effects, both acute and delayed

Skin and eye irritation.

4.3 Indication of any immediate medical attention and special treatment needed.

Notes to medical doctor:

This product has low oral, dermal and inhalation toxicity, and is an irritant. Treatment is controlled removal of exposure followed by symptomatic and supportive care.

5. Fire-Fighting Measures

5.1 **Extinguishing media** Dry chemical, CO₂, water spray or regular foam.

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products None

General Hazard No known physical hazard, non-combustible.

Properties contributing to

Flammability None

Flashpoint Not applicable

Flammable limits in air Upper: Not available Lower: Not available.

Auto ignition temperature Not applicable

Sensitivity to static discharge Not applicable

Sensitivity to static impact Not applicable

5.3 Advice for fire-fighters

Wear full protective clothing and self-contained breathing apparatus (SCBA) approved for fire fighting. This is necessary to protect against the hazards of heat, products of combustion and oxygen deficiency. Do not breathe smoke, gases or vapors generated.

COMMENTS:

(See Section 10, Stability and Reactivity)

6. Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

Before cleanup measures begin, review the entire SDS with particular attention to Section 2, Hazards Identification; and Section 8, Exposure Controls/Personal Protection.

6.2 Environmental precautions

Do not wash into drains. Dispose of at qualified waste disposal facility.

6.3 Methods and material for containment and cleaning up

Sweep up and place in suitable container. Dispose of waste according to local and Federal laws and regulations.

6.4 Reference to other sections

Before cleanup measures begin, review the entire SDS with particular attention to Section 2, Hazards Identification; and Section 8, Exposure Controls/Personal Protection.

6.5 Additional information

Not specified.

7. Handling and Storage

7.1 Precautions for safe handling

Avoid contact with eyes, skin or clothing. Use with adequate ventilation. Wear safety glasses or goggles and rubber gloves. Wash thoroughly after handling.

7.2 Conditions for safe storage, including any incompatibilities

Keep away from strong acids. Keep container closed.

7.3 Specific end use(s)

Defined in Exposure scenarios. Industrial and professional use only

8. Exposure Controls / Personal Protection

8.1 Control parameters

DNEL

Long-term exposure, systemic, inhalation Not available
 Long-term exposure, systemic, dermal Not available

PNEC

PNEC aqua (freshwater) Not available
 PNEC STP Not available

EXPOSURE LIMITS

Chemical Name	EU		EH40 (UK WEL)		USA (ACGIH)		USA (OSHA)	
	TWA	STEL	TWA	STEL	TWA	STEL/Ceiling	PEL	STEL/Ceiling
Lithium fluoride	none*		none*		none*		none*	
Fluorides as F:	2.5 mg/m ³		2.5 mg/m ³		2.5 mg/m ³		2.5 mg/m ³	

* No occupational exposure limit value

8.2 Exposure controls

Engineering controls:

Use local exhaust ventilation to keep airborne concentrations below exposure limits.

Personal protective equipment

Eyes and Face:

Safety glasses or goggles

Respiratory:

When engineering controls are not adequate, wear a respirator approved for protection against inorganic dusts.

US: NIOSH or MSHA approved

Europe: CEN Class P type

Protective Clothing:

Gloves: Nitrile/Neoprene/PVC/Natural Rubber (permeation breakthrough not detected during 6 hr test)

These glove recommendations should not be used as the absolute basis for glove selection. Actual in-use conditions may vary glove performance from the controlled conditions of laboratory tests. Factors such as concentration and temperature, glove thickness and glove reuse, may affect performance. Other glove requirements, such as length, dexterity, cut, abrasion, puncture and snag resistance, or glove grip need to be considered in making your final selection.

Other: Not specified.

Work Hygienic Practices:

Quick-drench eyewash and safety shower.

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

<u>Appearance:</u>	White powder
<u>Odor:</u>	Odorless
<u>Odor threshold:</u>	None
<u>pH:</u>	(1% Slurry) @ 25°C: 8
<u>Melting point:</u>	848°C (1560°F)
<u>Boiling point:</u>	1681°C (3060°F)
<u>Flash point:</u>	Not applicable
<u>Evaporation rate(butyl acetate = 1):</u>	Not applicable
<u>Flammability:</u>	Not flammable
<u>Flammable limits:</u>	Not applicable
<u>Vapor pressure:</u>	Not applicable
<u>Vapor density (air = 1):</u>	Not applicable
<u>Specific gravity:</u>	2.6 g/cc
<u>Solubility in water:</u>	0.1 % by wt. @ 25°C (77°F)
<u>Partition coefficient n-octanol/ water:</u>	Not available
<u>Autoignition temperature:</u>	Not applicable
<u>Decomposition temperature:</u>	Not available
<u>Viscosity:</u>	Not applicable
<u>Explosive properties:</u>	Not explosive
<u>Oxidizing properties:</u>	Not an oxidizer

9.2 Other information

<u>Self-reactive properties</u>	Does not meet classification criteria.
<u>Pyrophoric properties</u>	Does not meet classification criteria.
<u>Self-heating properties</u>	Does not meet classification criteria.
<u>Water reactive properties</u>	Does not meet classification criteria.
<u>Corrosive to metals</u>	Does not meet classification criteria.
<u>Molecular weight:</u>	25.94

10. Stability and Reactivity

10.1 <u>Reactivity</u>	Reacts with acids to form hydrogen fluoride.
10.2 <u>Chemical stability</u>	Stable
10.3 <u>Possibility of hazardous reaction</u>	Hazardous polymerization will not occur.
10.4 <u>Conditions to avoid</u>	Contact with acids
10.5 <u>Incompatible materials</u>	Acids
10.6 <u>Hazardous decomposition products</u>	None

11. Toxicological Information

11.1 Information on toxicological effects

(a) acute toxicity	Lithium fluoride acute oral toxicity > 608 mg/kg (rat)
(b) skin corrosion/irritation	Classified as not irritating to skin on the basis of lithium fluoride.
(c) serious eye damage/irritation	Classified as irritant to eyes on the basis of lithium fluoride.
(d) respiratory/skin sensitisation	Classed as not sensitizing to skin on the basis of lithium fluoride.
(e) germ cell mutagenicity	Classified as not mutagenic based on lithium fluoride.
(f) carcinogenicity	Classified as not carcinogenic based on lithium fluoride.
(g) reproductive toxicity	Classified as not a reproductive toxin based on lithium fluoride.
(h) STOT-single exposure	Classified as not causing organ damage based on lithium fluoride.
(i) STOT-repeated exposure	Classified as not causing organ damage on repeat exposure based on lithium fluoride.
(j) aspiration hazard	Lithium fluoride, a solid, does not present an aspiration hazard.

Acute Effects From Overexposure:

No data available for the formulation.
No envisaged effects other than acute effects from local irritation

Chronic Effects From Overexposure:

No data available for product.

Carcinogenicity Listings

EH40: Not listed.
IARC: Not listed.
NTP: Not listed.
OSHA: Not considered a carcinogen under OSHA.
ACGIH: Not listed.

12. Ecological Information

- 12.1 **Toxicity**: No classification
- 12.2 **Persistence and degradability**
Inorganic salt.
- 12.3 **Bioaccumulative potential**
Inorganic. Lithium salts are not bioaccumulative
- 12.4 **Mobility in soil**
Not expected to be mobile..
- 12.5 **Results of PBT and vPvB assessment**
Inorganic
- 12.6 **Other adverse effects**
None

13. Disposal Considerations

- 13.1 **Waste treatment methods**
Use a qualified industrial waste disposal facility. Dispose of waste according to local and Federal laws and regulations.

14. Transport Information

- 14.1 **UN Number** None
- 14.2 **UN proper shipping name (IMDG, ICAO, ADR, DOT)** None
- 14.3 **Transport hazard class(es) (IMDG, ICAO, ADR, DOT)** Based on available data, the classification criteria are not met.
- 14.4 **Packing group (IMDG, ICAO, ADR, DOT)** None
- 14.5 **Environmental hazards** Based on available data, the classification criteria are not met.
- 14.6 **Special precautions for user** None
- 14.7 **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** None

15. Regulatory Information

- 15.1 **Safety, health and environmental regulations/legislation specific for the substance or mixture**

EUROPEAN UNION:

German Wassergefährdungsklasse (water hazard class)

Lithium fluoride

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UNITED STATES:

Section 311 Hazard Category (40 CFR 370):

Immediate (acute) health hazard,

Section 313 Reportable Ingredients (40 CFR 372):

This product does not contain a toxic chemical subject to the reporting requirements of Section 313 of Emergency Planning and

Section 302 Extremely Hazardous

Community Right-To-Know Act of 1986.

Substances (40 CFR 355):

Not listed

CERCLA Hazardous Substance (40 CFR 302.4):

Not listed

TSCA Sec 12b Export Notification:

This product is not subject to TSCA 12 (b) Export Notification Requirements.

NFPA Rating:

Health: 1 Flammability: 0 Reactivity: 0 Special: None

INTERNATIONAL INVENTORY STATUS:

<u>Inventory/Country</u>	<u>Product Status</u>
EINECS (EU)	Listed
TSCA (US)	Listed
ECL (Korea)	Listed
DSL (Canada)	Listed

15.2 Chemical Safety Assessment

A Chemical Safety Assessment has not been completed for this material

16. Other Information

European Union:

R Phrases:

Harmful if swallowed	R22
Irritating to eyes	R36

List of Abbreviations used in this SDS:

PBT	Persistent, Bioaccumulative and Toxic
vPvB	very Persistent, very Bioaccumulative
PEC	Predicted environmental concentration
PNEC	Predicted no effect concentration
DNEL	Derived no effect level

Specific uses identified for Exposure Scenarios

Not specified

REVISION SUMMARY: Revision # 2. Format revised. Sections 3, 11, 12 and 15 revised.

This SDS has been prepared to meet U. S. OSHA Hazard Communication Standard requirements.

type 1b

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