

## 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
- 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**
- |  |  |   |
|--|--|---|
| <b>North America</b><br>FMC Lithium USA Corp.<br>2801 Yorkmont Road, Suite 300<br>Charlotte, NC 28208<br>Phone: +1.704.426.5300<br>Fax: +1.704.426.5370<br>1.888.lithium | <b>Europe</b><br>FMC Chemicals Limited<br>Commercial Road<br>Bromborough, Merseyside<br>CH62 3NL, England<br>Phone: +44.151. 334.8085<br>Fax: +44.151.482.7361 | <b>Asia Pacific</b><br>FMC Specialty Chemicals (Zhangjiagang)<br>Co. Ltd.<br>32 Beijing Road,<br>Yangtse River Chemical Park,<br>Zhangjiagang Free Trade Zone, Jiangsu<br>215635, China<br>T: +86.512.5832.7307<br>Fax: +86.512.5832.7311 |
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email: [lithium.info@fmc.com](mailto:lithium.info@fmc.com)  
Web: [www.livent.com](http://www.livent.com)

#### 1.4 Emergency Telephone Number:

<b>North America</b> CHEMTREC: +1.800.424.9300 +1.703.527.3887 Plant: +1.704.629.5361	<b>Europe</b> <b>24 hr Specialist advice number:</b> CHEMTREC: +44 870 8200418	<b>Asia Pacific</b> Phone: +86.512.5832.7307
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### 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, CO<sub>2</sub>, 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 TWA STEL	EH40 (UK WEL) TWA STEL	USA (ACGIH) TWA STEL/Ceiling	USA (OSHA) PEL STEL/Ceiling
Lithium fluoride	none*	none*	none*	none*
Fluorides as F:	2.5 mg/m <sup>3</sup>	2.5 mg/m <sup>3</sup>	2.5 mg/m <sup>3</sup>	2.5 mg/m <sup>3</sup>

\* 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.

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## 12. Ecological Information

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- 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

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## 13. Disposal Considerations

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

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## 14. Transport Information

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- 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

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## 15. Regulatory Information

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- 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**

**Substances (40 CFR 355):**

**CERCLA Hazardous Substance (40 CFR 302.4):**

**TSCA Sec 12b Export Notification:**

**NFPA Rating:**

Community Right-To-Know Act of 1986.  
Not listed

Not listed

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

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

**INTERNATIONAL INVENTORY STATUS:**

**Inventory/Country**

**Product Status**

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

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## 16. Other Information

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**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 # 3. Sections 1 and 16 modified. Legal entity and addresses changed.

This SDS has been prepared to meet U. S. OSHA Hazard Communication Standard requirements.  
type 1b

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