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

1.1 Product Identifier: Lithium fluoride

1.1.1 Substances

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

North America
FMC Lithium
Seven Lake Point Plaza
2801 Yorkmont Rd, Suite 300
Charlotte, NC 28208
Phone: +1.704.868.5300
Fax: +1.704.868.5370
1.888.lithium
Email: lithium.info@fmc.com
Web: www.fmclithium.com

Europe
FMC Chemicals
Commercial Road
Bromborough, Merseyside
CH62 3NL, England
Phone: +44.151.482.7356
Fax: +44.151.482.7361

Asia Pacific
FMC Lithium Asia Pacific Office
15F Far East International Plaza
Shanghai 200051, PRC
Phone: +86.21.6235.1919
Fax: +86.21.6235.1917

1.4 Emergency Telephone Number:

North America
CHEMTREC: +1.800.424.9300
Plant: +1.704.629.5361
Medical: +1.303.595.9048

Europe
24 hr Specialist advice number (Carechem): +44.1865.407333
Office (0900-1700): +44.151.334.8085

Asia Pacific
Phone: +86.21.6235.1919
Fax: +86.21.6235.1917

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:

2.2.4 Signal Word: Warning

Hazard Statement(s):
Harmful if swallowed
Causes serious eye irritation

Precautionary Statement(s):
Wear protective gloves/protective clothing/eye protection/face protection.
IF IN EYES: Rinse cautiously w/ water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

Air Treatment | Construction | Energy | Fine Chemicals | Glass & Ceramics | Greases & Lubricants | Polymers | Pool Water Treatment
---|---|---|---|---|---|---|---
NORTH AMERICA AND HEADQUARTERS
FMC Lithium
Seven LakePoint Plaza
2801 Yorkmont Rd, Suite 300
Charlotte, NC 28208
P: +1.704.408.3300
F: +1.704.428.5370

EUROPE
FMC Chemicals
Commercial Road
Bromborough
CH62 3NL, England
P: +44.151.482.7356
F: +44.151.482.7361

JAPAN
FMC Lithium
9F, Ayaya Building
2-3-3, Kita-Ayaya
Minato-ku, Tokyo
110-0061, Japan
T: +81.3.3402.3716
F: +81.3.3402.3700

CHINA
FMC Lithium
15F Far East International Plaza
No. 317, Xianshui Road
Shanghai 200051 P. R. China
T: +86.21.6235.1919
F: +86.21.6235.1917

INDIA
FMC India Private Limited
Embassy Star
II. Palace Road
High Grounds
Bangalore 560002, India
T: +91.88.2203.4311
F: +91.88.2203.5255

TAIWAN
FMC Lithium
9F-1, 283 Tun Hwa S. Rd.
Sec. 1
Taipei, Taiwan
T: +886.2.2705.4400
F: +886.2.2702.7460
Rinse mouth. P330
Wash hands thoroughly after handling. P264

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]**

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

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

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS #</th>
<th>EC No</th>
<th>Wt.%</th>
<th>Symbols</th>
<th>R-phrases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lithium fluoride</td>
<td>7789-24-4</td>
<td>232-152-0</td>
<td>100</td>
<td>Xn</td>
<td>R22</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Xi</td>
<td>R36</td>
</tr>
</tbody>
</table>

3.2 **Mixtures**
Not applicable.

(see Section 16 for R-phrase 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**
Under fire conditions, may produce toxic fluorides.

**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)**

Not available. Chemical safety assessment has not been completed for this product.

---

### 8. Exposure Controls / Personal Protection

8.1 **Control parameters**

#### EXPOSURE LIMITS

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>EU TWA</th>
<th>STEL</th>
<th>EH40 (UK WEL) TWA</th>
<th>STEL</th>
<th>USA (ACGIH) TWA</th>
<th>STEL/Ceiling</th>
<th>USA (OSHA) PEL</th>
<th>STEL/Ceiling</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lithium fluoride</td>
<td>none*</td>
<td></td>
<td>none*</td>
<td></td>
<td>none*</td>
<td></td>
<td>none*</td>
<td></td>
</tr>
<tr>
<td>Fluorides as F:</td>
<td>2.5 mg/m³</td>
<td>2.5 mg/m³</td>
<td>2.5 mg/m³</td>
<td>2.5 mg/m³</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* 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
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

**Respiratory:**

**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**

**Appearance:** White powder

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

9.2 Other information
Self-reactive properties Does not meet classification criteria.
Pyrophoric properties Does not meet classification criteria.
Self-heating properties Does not meet classification criteria.
Water reactive properties Does not meet classification criteria.
Corrosive to metals Does not meet classification criteria.
Molecular weight: 25.94

10. Stability and Reactivity

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

11. Toxicological Information

11.1 Toxicokinetics, metabolism and distribution
Non-human toxicological data Not available
Method: Dosis:
Routes of administration: Results:
Absorption: Distribution:
Metabolism:
Excretion:

11.2 Information on toxicological effects
11.2.1 Acute Toxicity: Acute Toxicity Category 4

<table>
<thead>
<tr>
<th>Substance/mixture</th>
<th>Oral: LD₅₀ = 608 mg/kg (rat)</th>
<th>Dermal: Based on available data, the classification criteria are not met.</th>
<th>Inhalation: Based on available data, the classification criteria are not met.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lithium fluoride</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

11.2.2 Skin Corrosion/Irritation: No classification

<table>
<thead>
<tr>
<th>Substance/mixture</th>
<th>Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lithium fluoride</td>
<td></td>
</tr>
</tbody>
</table>

11.2.3 Serious Eye Damage/Irritation: Eye Irritant Category 2

<table>
<thead>
<tr>
<th>Substance/mixture</th>
<th>Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lithium fluoride</td>
<td>Estimated to be irritating to eyes.</td>
</tr>
</tbody>
</table>

11.2.4 Respiratory or Skin Sensitization: No classification
11.2.5 Carcinogenicity, Mutagenicity, Reproductive Toxicity: No classification

<table>
<thead>
<tr>
<th>Substance/mixture</th>
<th>Germ Cell Mutagenicity</th>
<th>Carcinogenicity</th>
<th>Reproductive Toxicity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lithium fluoride</td>
<td>Based on available data, the classification criteria are not met.</td>
<td>Based on available data, the classification criteria are not met.</td>
<td>Based on available data, the classification criteria are not met.</td>
</tr>
</tbody>
</table>

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

11.2.6 Specific Target Organ Toxicity (STOT) --Single Exposure: No classification

<table>
<thead>
<tr>
<th>Substance/mixture</th>
<th>Germ Cell Mutagenicity</th>
<th>Carcinogenicity</th>
<th>Reproductive Toxicity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lithium fluoride</td>
<td>Based on available data, the classification criteria are not met.</td>
<td>Based on available data, the classification criteria are not met.</td>
<td>Based on available data, the classification criteria are not met.</td>
</tr>
</tbody>
</table>

11.2.7 Specific Target Organ Toxicity (STOT) -- Repeated Exposure: No classification

<table>
<thead>
<tr>
<th>Substance/mixture</th>
<th>Germ Cell Mutagenicity</th>
<th>Carcinogenicity</th>
<th>Reproductive Toxicity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lithium fluoride</td>
<td>Based on available data, the classification criteria are not met.</td>
<td>Based on available data, the classification criteria are not met.</td>
<td>Based on available data, the classification criteria are not met.</td>
</tr>
</tbody>
</table>

11.2.8 Aspiration Hazard: No classification

12. Ecological Information

12.1 Toxicity: No classification
<table>
<thead>
<tr>
<th>Substance/mixture</th>
<th>Germ Cell Mutagenicity</th>
<th>Carcinogenicity</th>
<th>Reproductive Toxicity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lithium fluoride</td>
<td>Based on available data, the classification criteria are not met.</td>
<td>Based on available data, the classification criteria are not met.</td>
<td>Based on available data, the classification criteria are not met.</td>
</tr>
</tbody>
</table>

12.2 Persistence and degradability
- No data available for the product.

12.3 Bioaccumulative potential
- No data available for the product.

12.4 Mobility in soil
- No data available for the product.

12.5 Results of PBT and vPvB assessment
- No data available for the product.

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 2

UNITED STATES:

Section 311 Hazard Category (40 CFR 370):
This product does not contain a toxic chemical subject to the reporting requirements of Section 313 of Emergency Planning and Community Right-To-Know Act of 1986.

Section 313 Reportable Ingredients (40 CFR 372):
Not listed

Section 302 Extremely Hazardous 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

CANADA:

WHMIS:
Product Identification No.: None
Hazard Classification: Class D, Division 2B (Eye irritant)
Ingredient Disclosure List: Not listed

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations.

INTERNATIONAL INVENTORY STATUS:

<table>
<thead>
<tr>
<th>Inventory/Country</th>
<th>Product Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>EINECS (EU)</td>
<td>Listed</td>
</tr>
<tr>
<td>TSCA (US)</td>
<td>Listed</td>
</tr>
<tr>
<td>ECL (Korea)</td>
<td>Listed</td>
</tr>
<tr>
<td>DSL (Canada)</td>
<td>Listed</td>
</tr>
</tbody>
</table>

15.2 Chemical Safety Assessment

The Chemical Safety Assessment has not been completed for this mixture.

16. Other Information

European Union:

R Phrases:
Harmful if swallowed R22
Irritating to eyes R36

REVISION SUMMARY: Revision # 0. All sections revised. New format. Regular review completed.

This SDS has been prepared to meet European Regulation (EC) No 1907/2006 [and No 1272/2008], U. S. OSHA Hazard Communication Standard, and Canada's Workplace Hazardous Materials Information System (WHMIS) requirements.

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