

SAFETY DATA SHEET

LITHIUM NITRATE

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

- 1.1 **Product Identifier:** Lithium nitrate
- 1.1.1 **Substances** Lithium nitrate
- 1.1.2 **Alternate names and trade name** ADVAGuard[®] 391 Corrosion Inhibitor, Lectro[®] Lyte 800 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 Corporation
 2801 Yorkmont Road, Suite 300
 Charlotte, NC 28208
 Phone: +1.704.426.5300
 Fax: +1.704.426.5370
 1.888.lithium

Europe
 FMC Chemicals
 Commercial Road
 Bromborough, Merseyside
 CH62 3NL, England
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Asia Pacific
 FMC Asia Innovation Center
 No 3 Building No. 4560
 Jinke Road
 Shanghai, China 201203
 T: +86.21.2067.5888

Email: lithium.info@fmc.com
 Web: www.fmc.lithium.com

1.4 **Emergency Telephone Number:**

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

Europe
 24 hr Specialist advice number:
 CHEMTREC: +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]**

Oxidising solid Category 3
 Acute Toxicity Category 4

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

O, R8; Xn, R22

2.2 **Label Elements:**

2.2.3 **Hazard Pictograms(s):**



2.2.4 **Signal Word:**

Warning

Hazard Statement(s):

May intensify fire; oxidizer.
 Harmful if swallowed.

H272
 H302

Precautionary Statement(s):

Keep away from heat.
 Keep/Store away from clothing and combustible materials.
 Take any precaution to avoid mixing with combustible materials.
 Wash hands thoroughly after handling.
 Wear protective gloves/protective clothing/eye protection/ face protection.
 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
 Rinse mouth.
 In case of fire: Use water only for extinction.
 Do not eat, drink or smoke when using this product.
 Dispose of contents/ container to an approved waste disposal plant.

P210
 P220
 P221
 P264
 P280
 P301 + P312
 P330
 P370 + P378
 P270
 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 nitrate	7790-69-4	232-218-9	not avail.	not available	100	Ox. Sol. 3 Acute Tox. 4 H272 H302

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 nitrate	7790-69-4	232-218-9	100	O Xn	R8 R22

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 may produce mild irritation.

Treatment is controlled removal of exposure followed by symptomatic and supportive care.

5. Fire-Fighting Measures

5.1 **Extinguishing media** Use water only. Do not use dry chemical, CO₂ or Halon.

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products

Oxygen, nitrogen oxide

General Hazard

Oxidizer. Contact with easily oxidizable or combustible material may cause fire or explosion upon ignition from any source.

Properties contributing to

Oxidizer

Flammability

Flashpoint

Not applicable

Flammable limits in air

Not applicable

Auto ignition temperature

Not available

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**
 Keep combustibles (wood, paper, oil etc.) away from spilled material. With clean shovel, place into clean dry container, and cover loosely. 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**
 Do not get in eyes, on skin or clothing. Avoid breathing dust. Wash thoroughly after handling.
- 7.2 Conditions for safe storage, including any incompatibilities**
 Store away from readily oxidizable materials, strong acids and flammable materials. Protect from moisture. 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

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

<u>Chemical Name</u>	<u>EU</u>		<u>EH40 (UK WEL)</u>		<u>USA (ACGIH)</u>		<u>USA (OSHA)</u>	
	<u>TWA</u>	<u>STEL</u>	<u>TWA</u>	<u>STEL</u>	<u>TWA</u>	<u>STEL/Ceiling</u>	<u>PEL</u>	<u>STEL/Ceiling</u>
Lithium nitrate	none*		none*		none*		none*	

* 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 granular solid
<u>Odor:</u>	Odorless
<u>Odor threshold:</u>	Not applicable
<u>pH:</u>	Not applicable
<u>Melting point:</u>	251°C (483°F)
<u>Boiling point:</u>	Decomposes @ 600°C (1112°F)
<u>Flash point:</u>	Not applicable
<u>Evaporation rate(butyl acetate = 1):</u>	Not applicable
<u>Flammability:</u>	Oxidizer. Contact with combustible materials may cause fire.
<u>Flammable limits:</u>	Not applicable
<u>Vapor pressure:</u>	Not applicable
<u>Vapor density (air = 1):</u>	Not applicable
<u>Specific gravity:</u>	1.2 to 1.3 g/cc at 25°C (77°F)
<u>Solubility in water:</u>	% by wt. @ 20°C (68°F): 43
<u>Partition coefficient n-octanol/ water:</u>	Not applicable
<u>Autoignition temperature:</u>	Not available
<u>Decomposition temperature:</u>	Decomposes @ 600°C (1112°F)
<u>Viscosity:</u>	Not applicable
<u>Explosive properties:</u>	Not explosive
<u>Oxidizing properties:</u>	Not an oxidizer
9.2 <u>Other information</u>	
<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>	68.95

10. Stability and Reactivity

10.1 <u>Reactivity</u>	Oxidizer. Contact with combustible materials may cause fire.
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>	The substance is an oxidizer, which releases oxygen on heating. The oxygen will intensify any fire in the immediate surroundings. Toxic oxides of nitrogen may be released in a fire situation.
10.5 <u>Incompatible materials</u>	Combustibles, organic and oxidizable materials (such as paper, wood and cotton). Some organics (fuels) form explosive mixtures.
10.6 <u>Hazardous decomposition products</u>	None

11. Toxicological Information

11.1 Information on toxicological effects

(a) acute toxicity	Lithium nitrate acute oral toxicity: LD ₅₀ : = 1426 mg/kg (rat), Lithium nitrate acute dermal toxicity: LD ₅₀ : > 2000 mg/kg (rat) Lithium nitrate acute inhalation toxicity: LC ₅₀ , lithium nitrate solution (30%): > 5.93 mg/L (rat, 4 hr.) (maximum attainable concentration)
(b) skin corrosion/irritation	Classified as not irritating to skin on the basis of lithium nitrate.
(c) serious eye damage/irritation	Classified as not irritating to eyes on the basis of lithium nitrate.
(d) respiratory/skin sensitisation	Classified as not sensitizing to skin on the basis of lithium nitrate.
(e) germ cell mutagenicity	Classified as not mutagenic based on lithium nitrate.
(f) carcinogenicity	Classified as not carcinogenic based on lithium nitrate.
(g) reproductive toxicity	Classified as not a reproductive toxin based on lithium nitrate.
(h) STOT-single exposure	Classified as not causing organ damage based on lithium nitrate.
(i) STOT-repeated exposure	Classified as not causing organ damage on repeat exposure based on lithium nitrate.
(j) aspiration hazard	Lithium nitrate, 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
No data available for product.
- 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** UN2722
- 14.2 **UN proper shipping name (IMDG, ICAO, ADR, DOT)** Lithium Nitrate
- 14.3 **Transport hazard class(es) (IMDG, ICAO, ADR, DOT)** 5.1, Oxidizing Agent
- 14.4 **Packing group (IMDG, ICAO, ADR, DOT)** III
- 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 nitrate

1

UNITED STATES:

Section 311 Hazard Category (40 CFR 370):

Section 313 Reportable Ingredients (40 CFR 372):

Fire hazard, immediate (acute) health hazard.
This product contains lithium nitrate which is subject to the reporting requirements of Section 313 of the Emergency Planning and Right-To-Know Act of 1986.

Water dissociable nitrate compounds are a category of compounds subject to this reporting requirement. They are reportable only when in aqueous solution. This information must be included in all SDS's that are copied and distributed for this material.

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: 1 Special: OXY

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:

Oxidizer. R8
Harmful if swallowed. R22

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 available

REVISION SUMMARY: Revision # 1. Sections 2, 3, 11 12, and 15 revised.

This SDS has been prepared to meet European Regulation (EC) No 1907/2006 [and No 1272/2008], and U. S. OSHA Hazard Communication Standard requirements.

type 6a

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