SDS Ref. No: QS-SDS-100
Date Approved: 1 May, 2015
Revision No: 1

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

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 Lithium
Seven LakePointe 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. 334.8085
Fax: +44.151.482.7361

Asia Pacific
FMC Asia Innovation Center
No 3 Building No. 4560
Jinke Road
Shanghai, China 201203
T: +86.21.2067.5888

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: +1.703.527.3887
Office (0900-1700)**:** +44.151.334.8085

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.	H272
Harmful if swallowed.	H302
Precautionary Statement(s):	
Keep away from heat.	P210
Keep/Store away from clothing and combustible materials.	P220
Take any precaution to avoid mixing with combustible materials.	P221
Wash hands thoroughly after handling.	P264
Wear protective gloves/protective clothing/eye protection/ face protection.	P280
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.	P301 + P312
Rinse mouth.	P330
In case of fire: Use water only for extinction.	P370 + P378
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 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-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 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, CO_2 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 Flammability Oxidizer

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

Chemical Name	EU		EH40 (UK WEL)		USA (ACGIH)		USA (OSHA)	
	TWA	STEL	TWA	STEL	TWA	STEL/Ceiling	PEL	STEL/Ceiling
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

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

10. Stability and Reactivity

10.1	**Reactivity**	Oxidizer. Contact with combustible materials may cause fire.
10.2	**Chemical stability**	Stable
10.3	**Possibility of hazardous reaction**	Hazardous polymerization will not occur.
10.4	**Conditions to avoid**	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	**Incompatible materials**	Combustibles, organic and oxidizable materials (such as paper, wood and cotton). Some organics (fuels) form explosive mixtures.
10.6	**Hazardous decomposition products**	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	Classed 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):	Fire hazard, immediate (acute) health hazard.
Section 313 Reportable Ingredients (40 CFR 372):	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:

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

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
Copyright 2015. FMC Corporation. All Rights Reserved. ADVAGuard, Lectro, FMC and the FMC logo are trademarks of FMC Corporation.