

# Safety Data Sheet

Lithium Nitrate Solution

MRD-222

## \*\*\* Section 1 - Chemical Product and Company Identification \*\*\*

### Product Identifier:

Lithium Nitrate Solution

### Chemical Name

Aqueous Lithium Nitrate Solution

### Recommended Use

Various Industrial Applications

### Manufacturer Information

MINERAL RESEARCH & DEVELOPMENT  
5910 Pharr Mill Road  
Harrisburg, NC 28075

Phone: 704-455-4811  
FAX: 704-454-7390  
CHEMTREC: (800) 424-9300  
US and Canadian Shipping Only- 1-703-527-3887

### General Comments

NOTE: Emergency telephone numbers are to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure, or accident involving chemicals. All non-emergency questions should be directed to customer service.

## \*\*\* Section 2 - Hazard Identification \*\*\*

### GHS Classification

Eye Damage/Irritation, Category 2B  
Acute Toxicity – Oral, Category 4

### GHS Label Elements

#### Symbol(s)



#### Signal Word -

WARNING

### Hazard Statements

Causes serious eye irritation.  
Harmful if swallowed.

### Precautionary Statements

#### Prevention

Wash skin thoroughly after handling.

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Do not eat, drink, or smoke when using this product.

## Response

IF exposed or concerned: Get medical advice/attention.

IF ON SKIN: Rinse skin with plenty of soap and water. Take off immediately any contaminated clothing. Wash contaminated clothing before reuse. If skin irritation or rash occurs: Get medical advice/attention.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

IF INHALED: If inhaled, remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

IF SWALLOWED: Rinse mouth. Do not induce vomiting. Immediately call a POISON CENTER or doctor/physician.

## Storage

Store locked up.

## Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations.

## Hazard(s) Not Otherwise Classified

This product is an aqueous mixture, which will not burn. However, if evaporated to dryness this product is an oxidizer and can sustain combustion.

<b>*** Section 3 - Composition / Information on Ingredients ***</b>
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CAS #	Component	Percent
7790-69-4	Lithium nitrate	30
7732-18-5	Water	70

## Component Related Regulatory Information

This product may be regulated, have exposure limits or other information identified as the following: Nitrate compounds, Water Dissociable Nitrate Compounds, Lithium salts.

## Component Information/Information on Non-Hazardous Components

This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication). This product is considered hazardous under the criteria specified in the Canadian Workplace Hazardous Materials Information System (WHMIS).

The balance of this product's composition contains water and other components. Each of the other components are present in less than 1% concentration (0.1% concentration for potential carcinogens, reproductive toxins, sensitizers, and mutagens. None of the other components contribute significant additional hazards at the concentrations in this product.

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## \*\*\* Section 4 - First Aid Measures \*\*\*

### Description of Necessary Measures

#### Eyes

Immediately flush eyes with water for at least 15 minutes, while holding eyelids open. If skin irritation or rash occurs: Get medical advice/attention.

#### Skin

For skin contact, wash immediately with soap and water. If irritation persists get medical attention.

#### Ingestion

If material is ingested, immediately contact a physician or poison control center. Give one to two glasses of water or milk. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to a victim who is unconscious or is having convulsions.

#### Inhalation

If inhaled, immediately remove the affected person to fresh air. If the affected person is not breathing, apply artificial respiration. If irritation persists get medical attention.

### Most Important Symptoms/Effects

#### Acute and Delayed

This product may be moderately irritating to contaminated tissues. The nitrate component of this product may cause methemoglobinemia upon ingestion characterized by cyanosis, headache, dizziness, fatigue, nausea, vomiting, drowsiness, stupor, coma and rarely death.

### Indication of Immediate Medical Attention and Special Treatment Needed, If Needed

Treat symptomatically and supportively.

### Notes to Physician

Antidote: The following antidote is recommended for lithium poisoning and treatment. The decision as to the severity of poisoning requires administration of any antidote, and actual dose required should be made by qualified medical personnel.

NITRATE POISONING: 1) Emergency measures: Delay absorption of ingested nitrates by giving milk, water or activated charcoal and then remove by gastric lavage or emesis. Remove poison from skin by scrubbing with soap and water. 2) General measures: Treat methemoglobinemia with dyspnea by methylene blue injection.

LITHIUM POISONING: 1) In single ingestion episodes, give syrup of ipecac and/or perform gastric lavage if productive vomiting has not already occurred. 2) Fluid electrolyte replacement for the correction of dehydration and acid-base imbalances. Over hydration may precipitate pulmonary edema. 3) Infusion of urea or mannitol, alkalinization of the urine, and aminophylline increase lithium excretion in patients with good renal function. 4) Extracorporeal or peritoneal hemodialysis to decrease lithium levels and control uremia in severe intoxications. If a massive overdose is known with certainty to have been ingested, it may be prudent to institute these measures even in the absence of positive clinical findings because of severe delayed toxicity. 5) Diazepam for the suppression of abnormal motor activity. 6) Support treatment for central nervous depression. 7) Frequent electrocardiograms to assess cardiac status (Groleau, Smith, Hodge-Clinical Toxicology of Commercial Products, Fifth Edition)

Activated charcoal does not bind lithium effectively and is not useful in isolated lithium toxicity. (Groleau, Lithium Toxicity, Emergency Medicine Clinics of North America, Volume 12, Number 2, May, 1994)

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Raising the sodium intake does not increase lithium clearance (Thomassen, K. Renal lithium elimination in man and active treatment of lithium poisoning. Acta Psychiatr. Scand., Suppl. No. 207:83-84, 1969)

## \*\*\* Section 5 - Fire Fighting Measures \*\*\*

### General Fire Hazards

This product is an aqueous mixture, which will not burn. However, if evaporated to dryness this product is an oxidizer and can sustain combustion.

### Hazardous Combustion Products

Thermal decomposition products may include irritating vapors and toxic gases including oxides of lithium and nitrogen. If heated to evaporation, this product may evolve oxygen and increase fire hazard.

### Extinguishing Media

Dry chemical, foam, carbon dioxide, water fog.

### Fire Fighting Equipment/Instructions

Fire fighters should wear full-face, self-contained breathing apparatus.

**NFPA Ratings: Health: 1 Fire: 0 Reactivity: 0**

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe



## \*\*\* Section 6 - Accidental Release Measures \*\*\*

### Containment Procedures

Stop the flow of material, if this is without risk. Wear appropriate protective equipment and clothing during clean up. Contain the discharged material and dike the spilled material where possible. Prevent entry into sewers, drains, underground or confined spaces, water intakes and waterways. Avoid contact with combustible materials.

### Clean-Up Procedures

Absorb spill with inert material such as: lime, polypads, or other suitable absorbent material. Shovel the absorbed material into appropriate container for disposal.

### Evacuation Procedures

Isolate area. Keep unnecessary personnel away.

### Special Procedures

Follow all Local, State, Federal and Provincial regulations for disposal.

## \*\*\* Section 7 - Handling and Storage \*\*\*

### Handling Procedures

Open container carefully, as needed to relieve any build up of pressure. Do not get this material in your eyes, on your skin, or on your clothing. Do not inhale vapors or mists of this product. Use this product with adequate ventilation. Wash thoroughly after handling.

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## Storage Procedures

Store in a cool, dry area. Do not freeze. Store away from direct sunlight and any sources of heat. Empty product containers may contain product residue. Do not reuse empty containers. Do not store this material in open or unlabeled containers.

## \*\*\* Section 8 - Exposure Controls / Personal Protection \*\*\*

### General Product Information

Keep formation of airborne mists to a minimum.

### Component Exposure Limits

ACGIH, OSHA, and NIOSH have not development exposure limits for this product's components.

### Engineering Controls

Provide local and general exhaust ventilation to effectively remove and prevent buildup of any vapors or mists generated from the handling of this product

### PERSONAL PROTECTIVE EQUIPMENT

#### Personal Protective Equipment: Eyes/Face

Wear safety glasses; chemical goggles (if splashing is possible).

#### Personal Protective Equipment: Skin

Use impervious gloves. Use of an impervious apron is recommended.

#### Personal Protective Equipment: Respiratory

Respiratory protection; not normally required for ambient air concentrations not exceeding the Occupational Exposure Limit. If ventilation is not sufficient to effectively prevent buildup of vapors or mists, appropriate approved NIOSH respiratory protection must be provided. Respirators should be selected by and used under the direction of a trained health and safety professional following the requirements found in OSHA's respirator standard (29 CFR 1901.134) and ANSI's standard for respiratory protection (Z88.2-1992), applicable U.S. regulations, or the Canadian CSA Standard Z94.4-93 and applicable standards of Canadian Provinces. A written respiratory protection program, including provisions for medical certification, training, fit-testing, exposure assessments, maintenance, inspection, cleaning, and convenient, sanitary storage, must be implemented.

#### Personal Protective Equipment: General

Eyewash fountains and emergency showers are required. An emergency spill response will necessitate the use of more stringent personal protective equipment.

## \*\*\* Section 9 - Physical & Chemical Properties \*\*\*

<b>Appearance:</b>	White to pale yellow	<b>Odor:</b>	Odorless
<b>Physical State:</b>	Liquid	<b>Odor Threshold:</b>	Not available
<b>Vapor Pressure:</b>	Not Available	<b>pH:</b>	3 - 7
<b>Vapor Density:</b>	Not Available	<b>Specific Gravity:</b>	1.20 - 1.23 @20 °C
<b>Boiling Point / Boiling Range:</b>	>212 °F (>100 °C)	<b>Evaporation Rate:</b>	Not available
<b>Melting Point / Freezing Point:</b>	Not Available	<b>Relative Density:</b>	Not available
<b>Solubility (H<sub>2</sub>O):</b>	Soluble	<b>Auto-ignition Temperature:</b>	Not available
<b>Flash Point:</b>	Not Available	<b>Decomposition Temperature:</b>	Not available
<b>Upper Flammable Limit (UFL):</b>	Not available	<b>Lower Flammable Limit (LFL):</b>	Not available
<b>Viscosity:</b>	Not available	<b>Partition Coefficient (n-octanol / water):</b>	Not available
<b>Flammability:</b>	Not combustible		

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## \*\*\* Section 10 - Chemical Stability & Reactivity Information \*\*\*

### Chemical Stability

Stable under normal conditions.

### Chemical Stability: Conditions to Avoid

Avoid exposure to extreme temperatures and contact with incompatible chemicals.

### Incompatibility

Strong reducing agents, flammable or combustible materials, powdered metals

### Hazardous Decomposition

Decomposition may yield carbon monoxide, carbon dioxide, oxides of lithium and nitrogen.

### Hazardous Polymerization

Will not occur.

## \*\*\* Section 11 - Toxicological Information \*\*\*

### Acute Toxicity

This product may be moderately irritating to contaminated tissues. The nitrate component of this product may cause methemoglobinemia upon ingestion characterized by cyanosis, headache, dizziness, fatigue, nausea, vomiting, drowsiness, stupor, coma and rarely death.

### Component Analysis - LD50/LC50

No data available

### Information on Likely Routes of Exposure

#### Inhalation

No data available.

#### Ingestion

No data available.

#### Skin Contact

No data available.

#### Eye Contact

No data available.

#### Immediate Effects

No data available.

#### Delayed Effects

No data available.

#### Medical Conditions Aggravated by Exposure

No data available.

#### Irritation/Corrosivity Data

No data available.

#### Respiratory Sensitization

No data available.

#### Dermal Sensitization

No data available.

#### Germ Cell Mutagenicity

No data available.

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## Carcinogenicity

### Component Carcinogenicity

None of this product's components are listed by ACGIH, IARC, OSHA, NIOSH, or NTP.

## Reproductive Toxicity

No data available.

### Specific Target Organ Toxicity - Single Exposure

No information available.

### Specific Target Organ Toxicity - Repeated Exposure

No information available.

## Aspiration Hazard

No information available.

## \*\*\* Section 12 - Ecological Information \*\*\*

## Ecotoxicity

### A: General Product Information

In high concentrations, this product may be harmful to both terrestrial and aquatic plant and animal life.

### B: Component Analysis - Ecotoxicity - Aquatic Toxicity

No ecotoxicity data are available for this product's components.

## Environmental Fate

Based on the physical properties of this product, significant environmental persistence and bioaccumulation would not be expected.

## \*\*\* Section 13 - Disposal Considerations \*\*\*

## US EPA Waste Number & Descriptions

### A: General Product Information

Wastes must be tested using methods described in 40 CFR Part 261 to determine if it meets applicable definitions of hazardous wastes.

### B: Component Waste Numbers

No EPA Waste Numbers are applicable for this product's components.

## Disposal Instructions

Dispose of waste material according to Local, State, Federal, and Provincial Environmental Regulations.

## \*\*\* Section 14 - Transportation Information \*\*\*

## US DOT Information

**Shipping Name:** This product is not regulated as a hazardous material for transportation.

## Canada Transportation of Dangerous Goods Information

**Shipping Name:** This product is not regulated as a hazardous material for transportation.

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## International Maritime Dangerous Goods Information

**Shipping Name:** This product is not regulated as a hazardous material for transportation.

*** Section 15 - Regulatory Information ***
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## US Federal Regulations

### A: General Product Information

No additional information available.

### B: Component Analysis

This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65) and/or CERCLA (40 CFR 302.4).

#### Lithium nitrate (7790-69-4)

SARA 313: 1.0 % de minimis concentration (reportable only when in aqueous solution, Chemical Category N511) (related to Nitrate Compounds, water dissociable)

**SARA 311/312:** Acute Health: Yes Chronic Health: Yes Fire: No Pressure: No Reactive: No

### C: Federal Insecticide, Fungicide, and Rodenticide Act

No information is available.

## State Regulations

### A: General Product Information

Other state regulations may apply. Check individual state requirements.

### B: Component Analysis - State

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	CA	MA	MN	NJ	PA	RI
Lithium nitrate	7790-69-4	No	No	No	Yes	No	No

### Component Analysis - WHMIS IDL

Components of this material have been checked against the Canadian WHMIS Ingredients Disclosure List. The List is composed of chemicals which must be identified on MSDSs if they are included in products which fall under WHMIS criteria specified in the Controlled Products Regulations and present above the threshold limits listed on the IDL. No components are listed in the WHMIS IDL.

### WHMIS Classification:

C

## Additional Regulatory Information

### A: General Product Information

No additional information available.



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## B: Component Analysis - Inventory

Component	CAS #	TSCA	DSL	NDSL	EINECS	AU	MITI	PH	KR	ELINCS	CN
Lithium nitrate	7790-69-4	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes
Water	7732-18-5	Yes	Yes	No	Yes	Yes	Yes	No	Yes	No	Yes

### \*\*\* Section 16 - Other Information \*\*\*

## Summary of Changes

New SDS: 08/06/2014; Revised 04/20/2015 v1.3; Revised 09/14/2017 v.2.0 – Hazard Assessment.

## Key / Legend

**ACGIH** = American Conference of Governmental Industrial Hygienists; **ACL** = Alternate Concentration Limit; **ANSI** = American National Standards Institute; **AU** = Australia; **BOD** - Biochemical Oxygen Demand; **°C** - Celsius; **CAS** = Chemical Abstracts Service; **CERCLA** = Comprehensive Environmental Response, Compensation, and Liability Act; **CFR** = Code of Federal Regulations; **CH** = China; **CPR** = Controlled Products Regulations; **CSA** = Canada Standards Association; **cSt** = centistokes (viscosity); **DOT** = Department of Transportation; **DSL** = Domestic Substances List; **EINECS** = European Inventory of Existing Commercial Chemical Substances; **ELINCS** = European List of Notified Chemical Substances; **EmS** = Emergency Response Procedures for Ships Carrying Dangerous Goods; **EPA** = Environmental Protection Agency; **EU** = European Union; **°F** - Fahrenheit; **HEPA** = High Efficiency Particulate Air; **HMIS** = Hazardous Material Information System; **IARC** = International Agency for Research on Cancer; **IATA** = International Air Transport Association; **IDL** - Ingredient Disclosure List; **IDLH** - Immediately Dangerous to Life and Health; **IMDG** = International Maritime Dangerous Goods; **JA** = Japan; **KO** = Korea; **LEL** - Lower Explosive Limit; **MEX** = Mexico; **mg/Kg** = milligrams per Kilogram; **mg/L** = milligrams per Liter; **mg/m<sup>3</sup>** = milligrams per Cubic Meter; **mppcf** = millions of particles per cubic foot; **MSHA** = Mine Safety and Health Administration; **NA** = Not Applicable or Not Available; **NFPA** = National Fire Protection Association; **NIOSH** = National Institute for Occupational Safety and Health; **NTP** = National Toxicology Program; **OSHA** = Occupational Safety and Health Administration; **PHL** = Philippines; **NZ** = New Zealand; **RCRA** = Resource Conservation & Recovery Act; **RQ** = Reportable Quantity; **SARA** = Superfund Amendments and Reauthorization Act; **STEL** = Short Term Exposure Limit; **TDG** = Transport of Dangerous Goods; **TSCA** = Toxic Substances Control Act; **TWA** - Time Weighted Average; **TWAEV** = Time Weight Average Exposure Value; **UEL** - Upper Explosive Limit; **US** - United States; **VLE-PPT** = Exposure Limit Value (Mexico); **WHMIS** = Workplace Hazardous Materials Information System.

## Other Information

Disclaimer: Supplier gives no warranty of merchantability or of fitness for a particular purpose. Any product purchased is sold on the assumption the purchaser will make his own tests to determine the quality and suitability of the product. Supplier expressly disclaims any and all liability for incidental and/or consequential property damage arising out of the use of this product. No information provided shall be deemed to be a recommendation to use any product in conflict with any existing patent rights. Read the Safety Data Sheet before handling product.

End of Sheet MRD-222