

SAFETY DATA SHEET
Nutrisulfate®-LT Granular



Revision date: 2020-06-18
Version 1.0

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier

Product Name: Nutrisulfate®-LT Granular

Synonyms: Sulfate-Enhanced Remediation Product, Epsom Salt, Magnesium Sulfate

Description: Magnesium sulfate, heptahydrate

Product Form: Substance

Recommended use of the chemical and restrictions on use

Recommended Use: Remediation of contaminated groundwater and soils.

Restrictions on Use: Use as recommended by the label

Details of the supplier and of the safety data sheet

Supplier Tersus Environmental, LLC
 1116 Colonial Club Rd
 Wake Forest, NC 27587
 Phone: +1-919-453-5577
 Email: info@tersusenv.com

Contact Person David F. Alden
 Phone: +1-919-453-5577 x2002
 Email: david.alden@tersusenv.com

Emergency telephone number

For leak, fire, spill or accident emergencies, call:

- +1-919-453-5577 (Tersus Office Hours, 8:00 AM to 5:00 PM Eastern)
- +1-800-424-9300 (Chemtrec 24 Hour Service – Emergency Only)
- +1-703-527-3887 (Chemtrec Outside United States 24 Hour Service – Emergency Only)
- +1-919-638-7892 Gary M. Birk (Outside office hours)

2. HAZARD IDENTIFICATION

Relevant identified uses of the substance or mixture

This product is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Skin Sens. 1; H317 May cause an allergic skin reaction.

Label elements

Signal word Not classified

Hazard statement Not classified in accordance with international standards for workplace safety.

Prevention

P261 Avoid breathing dust / fume / gas / mist / vapors / spray.
P272 Contaminated work clothing should not be allowed out of the workplace.
P280 Wear protective gloves / eye protection / face protection.

Response

P302+352 IF ON SKIN: Wash with plenty of soap and water.
P313 Get medical advice / attention.
P321 Specific treatment (see information on this label).
P333+313 If skin irritation or a rash occurs: Get medical advice / attention.
P363 Wash contaminated clothing before reuse.

Storage

No GHS storage statements

Disposal

P501 Dispose of contents / container in accordance with local / national regulations.

Other hazards

None known.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Formula Mixture

Hazardous components

Chemical and Common Name	CAS Number	Concentration (%)	OSHA PEL	ACGIH TLV
Magnesium sulfate, heptahydrate. Epsom salt	10034-99-8*	100	Not Established	Not Established

* Under the Toxic Substances Control Act (TSCA), hydrates are considered as mixtures of their anhydrous salt and water. Accordingly, the CAS Numbers 7487-88-9, 7732-18-5 are used for purposes of TSCA.

Synonyms are provided in Section 1.

Occupational exposure limits, if available, are listed in Section 8.

4. FIRST AID MEASURES

General Information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.
Eye Contact	Irrigate copiously with clean water for at least 15 minutes, holding the eyelids apart and seek medical attention.
Skin Contact	Wash off with soap and water. No known adverse effects. Get medical attention if irritation develops and persists.
Inhalation	Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
Ingestion	If large quantities of this material are swallowed, call a physician

immediately. Do NOT induce vomiting unless directed to do so by a physician. Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed

Eye contact: Causes mild irritation to the eyes.
Inhalation: Causes nausea, vomiting, abdominal cramps, and diarrhea.
Ingestion: Causes nausea, vomiting, abdominal cramps, and diarrhea.
Medical Conditions Generally Aggravated by Exposure: None known for this product. Over exposure to carbon dioxide may aggravate certain medical conditions.
Chronic hazards: No known chronic hazards. Not listed by NTP, IARC or OSHA as a carcinogen.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media Water. Water fog. Foam. Dry chemical powder. Carbon dioxide (CO₂).
Unsuitable extinguishing media None known.
Specific Hazards Arising from the chemical or mixture During fire, gases hazardous to health may be formed.
Special Fire Fighting Procedures This material is non-combustible. Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions Provide enough ventilation. Advice for emergency responders: protective equipment see Section 8. Wear protective clothing as described in Section 8 of this safety data sheet. Do not smoke or use open fire or other sources of ignition. Contact with walking surface may result in formation of slippery film/falling hazard.
First Aid: In case of contact with skin, wash with soap and water. If symptoms occur, seek medical attention. In case of contact with eyes, rinse with plenty of water for at least 15 minutes and see an eye specialist if irritation persists. In case of inhalation, remove to fresh air. In case of ingestion, drink water. If symptoms occur, seek medical assistance.
Environmental Precautions Sinks and mixes with water. No adverse effects known. Prevent further leakage or spillage if safe to do so.
Methods for Containment and Clean Up For large spill cleanup: Keep unnecessary people away; isolate hazard area and deny entry. Do not touch walk through spilled material. Sweep, scoop, or vacuum discharged material. Flush residue with water. Observe environmental regulations.

7. HANDLING AND STORAGE

Precautions for safe handling Avoid breathing dust. Promptly clean up spills.
Hygiene measures Handle in accordance with good industrial hygiene and safety procedures. Use good personal hygiene practices.

Conditions for safe storage, including any incompatibilities Keep containers closed and protected from extremes of temperature and humidity during storage. Recommended storage conditions 68-110°F and 55-87% relative humidity.

8. EXPOSURE CONTROL / PERSONAL PROTECTION

Control parameters

Exposure guidelines, ingredients with workplace control parameters.

Name	CAS-No	OSHA	ACGIH	NIOSH	Supplier
Magnesium sulfate	10034-99-8	No Established Limit	No Established Limit	No Established Limit	No Established Limit

Carcinogen Data

Name	CAS-No	OSHA	NTP	IARC
Magnesium sulfate	10034-99-8	Select Carcinogen: No	Known: No; Suspected: No	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No

Exposure Control

Protective equipment



Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Eye/face protection

The following protection should be worn: Safety glasses with shields, chemical splash goggles or face shield.

Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment.

Hand protection

For prolonged or repeated skin contact use suitable protective gloves.

Other skin and body protection

Wear suitable protective clothing.

Hygiene measures

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	Crystalline
Physical State	Solid
Color	White
Odor	Odorless
Odor threshold	Information Not Available
pH	Not measured
Salt-Out / Crystallization Temp	Not available.
Melting point/freezing point	2055.2 °F (1124 °C)
Initial boiling point and boiling range	Not available.
Flash point	Not available.
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	< 0 kPa at 25 °C < 0.13 hPa at 20 °C estimated
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	246 g/l at 20 °C estimated
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Bulk density	63 - 67 lb./ft ³ (Typical)
Molecular formula	H ₂ O ₄ S.7H ₂ O.Mg
Molecular weight	120.37 g/mol 246.47
pH in aqueous solution	6.2 - 6.6 (5% Solution)
Structural formula	MgSO ₄ + 7H ₂ O

10. STABILITY AND REACTIVITY

Reactivity	The product is stable and non-reactive under normal conditions of use, storage, and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	At very high temperatures, magnesium oxide, sulfur dioxide, and sulfur trioxide may be generated.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

100% of the mixture consists of ingredient(s) of unknown toxicity

Ingredient	Oral LD50, mg/kg	Skin LD50, mg/kg	Inhalation Vapor LC50, mg/L/4hr	Inhalation Dust/Mist LC50, mg/L/4hr	Inhalation Gas LC50, ppm
Magnesium sulfate	No data available	No data available	No data available	No data available	No data available

Note: When no route specific LD50 data is available for an acute toxin, the converted acute toxicity point estimate was used in the calculation of the product's ATE (Acute Toxicity Estimate).

Classification	Category	Hazard Description
Acute toxicity (oral)	---	Not Applicable
Acute toxicity (dermal)	---	Not Applicable
Acute toxicity (inhalation)	---	Not Applicable
Skin corrosion/irritation	---	Not Applicable
Serious eye damage/irritation	---	Not Applicable
Respiratory sensitization	---	Not Applicable
Skin sensitization	---	Not Applicable
Germ cell mutagenicity	---	Not Applicable
Carcinogenicity	---	Not Applicable
Reproductive toxicity	---	Not Applicable
STOT-single exposure	---	Not Applicable
STOT-repeated exposure	---	Not Applicable
Aspiration hazard	---	Not Applicable

12. ECOLOGICAL INFORMATION

Ecotoxicity

Information Not Available

Chemical Fate Information

Information Not Available

Environmental Fate

This material is not persistent in aquatic systems and does not contribute to BOD. It does not bioconcentrate up the food chain.

Physical/Chemical

Sinks and mixes with water.

Biodegradability

Readily degradable.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods

Waste material is not a hazardous waste. Dispose in accordance with federal, provincial and local regulations.

14. TRANSPORTATION INFORMATION

U.S. (D.O.T.)

Proper Shipping Name:	Chemicals not otherwise indexed (NOI) nonhazardous.
Hazard Class:	Not applicable
UN/NA:	Not applicable
Labels:	Not applicable

Canada (T.D.G.)

Proper Shipping Name:	Chemicals not otherwise indexed (NOI) nonhazardous.
Hazard Class:	Not applicable
UN/NA:	Not applicable
Labels:	Not applicable

IMDG

Proper Shipping Name:	Chemicals not otherwise indexed (NOI) nonhazardous.
Hazard Class:	Not applicable
UN/NA:	Not applicable
Labels:	Not applicable

IATA

Proper Shipping Name:	Chemicals not otherwise indexed (NOI) nonhazardous.
Hazard Class:	Not applicable
UN/NA:	Not applicable
Labels:	Not applicable

15. REGULATORY INFORMATION

US federal regulations**TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

SARA 304 Emergency release notification

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories	Immediate Hazard - No
	Delayed Hazard - No
	Fire Hazard - No
	Pressure Hazard - No
	Reactivity Hazard - No

SARA 302 Extremely hazardous substance No**SARA 311/312 Hazardous chemical** No**Other federal regulations****Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

EPCRA 311/312 Chemicals and RQs

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

EPCRA 302 Extremely Hazardous

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

EPCRA 313 Toxic Chemicals

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

Food and Drug Administration (FDA)

Total food additive
Direct food additive
GRAS food additive

US state regulations**Proposition 65 - Carcinogens (>0.0%)**

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

Proposition 65 - Developmental Toxins (>0.0%)

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

Proposition 65 - Female Repro Toxins (>0.0%)

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

Proposition 65 - Male Repro Toxins (>0.0%)

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

New Jersey RTK Substances (>1%)

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

Pennsylvania RTK Substances (>1%)

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

16. OTHER INFORMATION

The information contained in this Safety Data Sheet, as of the issue date, is believed to be true and correct. However, the accuracy or completeness of this information and any recommendations or suggestions are made without warranty or guarantee. Since the conditions of use are beyond the control of our company, it is the responsibility of the user to determine the conditions of safe use of this product. The information in this sheet does not represent analytical specifications; for this information contact Tersus Environmental.

Disclaimer: This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. All recommendations for the use of our products, whether given by us, orally or to be implied from data or lab tests results by us, are based on the current state of our knowledge at the time those recommendations are made. When additional information is obtained, these recommendations may be updated. They may also be influenced by circumstances outside our control. Notwithstanding, such recommendation the user is responsible that the product as supplied by us is suitable to the process or purpose he intends to use it. The user of the product is solely responsible for compliance with all laws and regulations applying to the use of this product. Since we cannot control the application, use or processing of the product, we do not accept responsibility. Therefore, the user should assure that the intended use of the product will not infringe in

any party's intellectual property right.



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End of Safety Data Sheet