

Safety Data Sheet

Magnesium Nitrate Hexahydrate 66.7% Solution

MRD-211

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

Product Identifier:

Magnesium Nitrate Hexahydrate 66.7% Solution

Chemical Name

Inorganic Nitrate Solution

Recommended Use

Various Industrial Applications

Manufacturer Information

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

Phone: 704-454-4811
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

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

GHS Label Elements

Symbol(s)



Signal Word

Warning

Hazard Statements

Causes eye irritation.
Causes skin irritation.
Harmful if swallowed.

Precautionary Statements

Prevention

Wear protective gloves/protective clothing/eye protection/face protection.
Wash thoroughly after handling.

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Response

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

IF ON SKIN (OR HAIR): Wash with plenty of soap and water. Take off contaminated clothing and wash it before reuse. If skin irritation occurs: 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. Call a POISON CENTER or doctor/physician if you feel unwell.

Storage

Store locked up.

Disposal

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

*** Section 3 - Composition / Information on Ingredients ***

CAS #	Component	Percent
13446-18-9	Magnesium nitrate, hexahydrate	66.7
7732-18-5	Water	33.3

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).

*** Section 4 - First Aid Measures ***

Description of Necessary Measures

Eyes Contact

IF IN EYES Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a POISON CENTER or doctor/physician if you feel unwell.

Skin Contact

IF ON SKIN (or hair): For skin contact, wash immediately with soap and water. If irritation persists get medical attention.

Ingestion

IF SWALLOWED: Rinse mouth. Call a POISON CENTER or doctor/physician if you feel unwell.

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.

Notes to Physician

Provide general supportive measures and treat symptomatically.

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*** Section 5 - Fire Fighting Measures ***

General Fire Hazards

This product is an aqueous mixture, which will not burn. If evaporated to dryness, the solid residue may pose a slight fire hazard. This product is an oxidizer in its dry form, which may cause spontaneous ignition of combustible materials.

Hazardous Combustion Products

Decomposition of this product may produce acid vapors, magnesium compounds, and oxides of nitrogen.

Extinguishing Media

Use any media suitable for the surrounding fires.

Fire Fighting Equipment/Instructions

Fire fighters should wear full-face, self-contained breathing apparatus and impervious protective clothing. Fire fighters should avoid inhaling any combustion products.

NFPA Ratings: Health: 2 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. Shovel 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.

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.

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when not in use. Inspect all incoming containers before storage, to ensure containers are properly labeled and not damaged.

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

Component Exposure Limits

ACGIH, OSHA, and NIOSH have not developed exposure limits for any of 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. 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 recommended.

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

Appearance:	Colorless to slightly yellow	Odor:	Odorless
Physical State:	Liquid	Odor Threshold:	Not Applicable
Vapor Pressure:	Not available	pH:	3.4 @ 59 °F (15 °C)
Vapor Density:	Not available	Specific Gravity:	1.35 - 1.36 @ 59 °F (15 °C)
Boiling Point / Boiling Range:	>212 °F (>100 °C)	Evaporation Rate:	Not available
Melting Point / Freezing Point:	Not available / 19.4 °F (-7 °C)	Relative Density:	Not available
Solubility (H₂O):	Soluble	Auto-ignition Temperature:	Not available
Flash Point:	Not available	Decomposition Temperature:	Not available
Upper Flammable Limit (UFL):	Not Applicable	Lower Flammable Limit (LFL):	Not Applicable
Viscosity:	Not available	Partition Coefficient (n-octanol / water):	Not available
Flammability:	Not available		

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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, contact with incompatible chemicals, and all contact with combustible materials.

Incompatibility

This product is incompatible with flammable and combustible materials, strong reducing agents and finely powdered metals.

Hazardous Decomposition

Magnesium and nitrogen oxides.

Hazardous Polymerization

Will not occur.

*** Section 11 - Toxicological Information ***

Acute Toxicity

This product is irritating to the eyes, respiratory system and skin.

Component Analysis - LD50/LC50

Water (7732-18-5)

Oral LD50 Rat: >90 mL/kg

Magnesium nitrate, hexahydrate (13446-18-9)

Oral LD50 Rat: 5440 mg/kg

Information on Likely Routes of Exposure

Inhalation

Inhalation of vapors or mists of the product can cause sneezing, coughing and difficulty breathing.

Ingestion

This product may be harmful or fatal if swallowed. If ingested, this product will immediately cause burns to the mouth, throat, esophagus and possibly the digestive tract. Ingestion can cause gastrointestinal irritation, nausea, vomiting and diarrhea. This product may cause methemoglobinemia upon ingestion characterized by cyanosis, headache, dizziness, fatigue, nausea, vomiting, drowsiness, stupor, coma and rarely death.

Skin Contact

This product is irritating to the skin. Depending on the duration of contact, symptoms will include reddening, discomfort, irritation, and possible tissue damage.

Eye Contact

Contact with the eyes can cause moderate irritation. Symptoms may include discomfort or pain and redness. Severe over exposure can result in swelling of the conjunctiva along with tissue damage which may lead to blindness.

Immediate Effects

Eye and skin irritation.

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Delayed Effects

Prolonged and/or repeated skin contact with this product may cause irritation/dermatitis.

Medical Conditions Aggravated by Exposure

No data available.

Irritation/Corrosivity Data

No data available.

Respiratory Sensitization

No data available.

Dermal Sensitization

No data available for the mixture

Germ Cell Mutagenicity

No data available for the mixture.

Carcinogenicity

Component Carcinogenicity

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

Reproductive Toxicity

No data available for the mixture.

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

No information available for the product.

*** 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.

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Disposal Instructions

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

*** Section 14 - Transportation Information ***

US DOT Information

Not a regulated hazardous material.

Canada Transportation of Dangerous Goods Information

Not a regulated hazardous material.

International Maritime Dangerous Goods Information

Not a regulated hazardous material.

*** Section 15 - Regulatory Information ***

US Federal Regulations

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).

Magnesium nitrate, hexahydrate (13446-18-9)

SARA 313: form R reporting required for 1.0% de minimis concentration; Chemical Category N511 (related to Water Dissociable Nitrate Compounds)

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

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

None of this product's components are listed on the state lists from CA, FL, MA, MN, NJ, or PA.

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. None of the components are listed on the IDL.

WHMIS Classification

C, D2B

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Additional Regulatory Information

A: General Product Information

All components are on the U.S. EPA TSCA Inventory List.

Magnesium Nitrate Hydrate is a hydrate of an anhydrous form that is on the US TSCA and Canadian DSL inventories, and can be referenced under the parent compound name (CAS #10377-60-3).

B: Component Analysis - Inventory

Component	CAS #	TSCA	DSL	NDSL	EINECS	AU	MITI	PH	KR	CN
Magnesium nitrate, hexahydrate	13446-18-9	Yes	Yes	No	No	Yes	Yes	Yes	No	Yes
Water	7732-18-5	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes

*** Section 16 - Other Information ***

Summary of Changes

New SDS: 01/05/2015 v1.0; Revised 04/20/2015 v1.3

Key / Legend

ACGIH = American Conference of Governmental Industrial Hygienists; **AU** = Australia; **BOD** - Biochemical Oxygen Demand; **C** - Celsius; **CA** - Canada; **CAS** = Chemical Abstracts Service; **CERCLA** = Comprehensive Environmental Response, Compensation, and Liability Act; **CFR** = Code of Federal Regulations; **CN** = China; **CPR** = Controlled Products Regulations; **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; **HPV** – High Production Volume Chemical (EU); **IARC** = International Agency for Research on Cancer; **IATA** = International Air Transport Association; **ICL** – In Commerce List (Canada); **IDL** - Ingredient Disclosure List; **IDLH** - Immediately Dangerous to Life and Health; **JP** = Japan; **KR** = Korea; **LEL** - Lower Explosive Limit; **MITI** = Japan Ministry of International Trade and Industry; **mg/Kg** = milligrams per Kilogram; **mg/L** = milligrams per Liter; **mg/m³** = milligrams per Cubic Meter; **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; **NJTSSR** = New Jersey Trade Secret Registry; **NDSL** = Non-Domestic Substances Inventory; **NTP** = National Toxicology Program; **NZ** = New Zealand; **OSHA** = Occupational Safety and Health Administration; **PH** = Philippines; **RCRA** = Resource Conservation & Recovery Act; **RQ** = Reportable Quantity; **SARA** = Superfund Amendments and Reauthorization Act; **STEL** = Short Term Exposure Limit; **TDG** = Transport Dangerous Goods; **TSCA** = Toxic Substances Control Act; **TWA** - Time Weighted Average; **UEL** - Upper Explosive Limit; **US** - United States; **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-211