# Magruder 240511 Mg thiosulfate

*results due June 15, 2024*

Guaranteed Analysis

Magnesium (Mg) ..... 4.0 %
4.0 % Water soluble Magnesium
Total Sulfur in Liquid ..... 10.0 %

Derived from: Sulfur, Magnesium Hydroxide, Magnesium Bisulfite

*Also analyze for:*
As (ppm), Cd (ppm), Cr (ppm), Co (ppm), Pb (ppm), Hg (ppm), Mo (ppm), Ni (ppm), Se (ppm), Cu (%) and Zn (%)

*The units above are those required for reporting data from this Magruder sample. They may not be the units required on a commercial fertilizer label.*

*Note: This Magruder Check Sample material is not to be used in the manufacture of products nor applied to any crops or for other fertilizer uses. It is intended for analytical testing purposes only.*

**SDS for this product can be found at:**
http://www.magrudercheckssample.org/SDS/240511GuarSDS.pdf

# SDS for Magruder 240511

**SDS Number:** 616 **Revision:** January 3, 2020

## Section 1: IDENTIFICATION

**1.1 Product Name:** **MagThio®**

**1.2 Other Identification:**

Chemical Family: Inorganic salt solution.
Formula: $MgS_2O_3$

**1.3 Recommended Use of Chemical:** Agricultural Industry – Fertilizer

**1.4 Manufacturer:** Tessenderlo Kerley Inc.
2910 N. 44th Street, Suite 100
Phoenix, Arizona 85018
Information: (602) 889-8300

**1.5 Emergency Contact:**

| | |
|---|---|
| Tessenderlo Kerley, Inc. | (800) 877-1737 |
| CHEMTREC | (800) 424-9300 Domestic |
| | (703) 527-3887 International |

## Section 2: HAZARD(S) IDENTIFICATION

**2.1 Hazard Classification:**

| | |
|---|---|
| Health | None |
| Physical | None |

**2.2 Signal Word:** Not Applicable

**2.3 Hazard Statement(s):** Not Applicable

**2.4 Symbol(s):** Not Applicable

**2.5 Precautionary Statement(s):** Not applicable

**2.6 Unclassified Hazard(s):** None

**2.6 Unclassified Hazard(s):** None

**2.7 Unknown Toxicity Ingredient:** None

## Section 3: COMPOSITION/INFORMATION on INGREDIENTS

**3.1 Chemical Ingredients:** (See Section 8 for exposure guidelines)

| Chemical | Synonym Common Name | CAS No. | EINECS No. | % by Wt. |
|---|---|---|---|---|
| Thiosulfuric acid ($H_2S_2O_3$), magnesium salt | Magnesium thiosulfate | 10124-53-5 | 233-340-5 | 20 - 25 |
| Magnesium sulfate | Magnesium sulfate | 7487-88-9 | 231-298-2 | 1.5 - 2.0 |
| Water | Water | 7732-18-5 | 231-791-2 | Remaining % |

## Section 4: FIRST AID MEASURES

**4.1 Symptoms/Effects:**

Acute: Eye contact may cause eye irritation. Repeated or prolonged skin contact may cause skin irritation. Ingestion may irritate the gastrointestinal tract.

Chronic: No known chronic effects.

**4.2 Eyes:** Immediately flush with large quantities of water for 15 minutes. Hold eyelids apart during irrigation to ensure thorough flushing of the entire area of the eye and lids. Obtain medical attention if irritation occurs.

**4.3 Skin:** Immediately flush with large quantities of water. Remove contaminated clothing under a safety shower. Continue rinsing. Obtain medical attention if irritation occurs.

**4.4 Ingestion:** If victim is conscious, give 2 to 4 glasses of water and induce vomiting by touching finger to back of throat. Obtain medical attention.

**4.5 Inhalation:** Remove victim from contaminated atmosphere. If breathing is labored, administer Oxygen. If breathing has ceased, clear airway and start CPR. Obtain medical attention.

## Section 5: FIRE FIGHTING MEASURES

**5.1 Flammable Properties:** (See Section 9 for additional flammable properties)

**NFPA:** **Health - 1** **Flammability - 0** **Reactivity - 0**

**5.2 Extinguishing Media:**

**5.2.1 Suitable Extinguishing Media:** Not flammable, use media suitable for combustibles involved in fire.

**5.2.2 Unsuitable Extinguishing Media:** Not applicable

**5.3 Protection of Firefighters:**

**5.3.1 Specific Hazards Arising from the Chemical:**

**Physical Hazards:** Heating (flames) of closed or sealed containers may cause violent rupture of container due to thermal expansion of compressed gases.

**Chemical Hazards:** Heating to dryness may cause the release of Sulfur and Oxides of Sulfur and Magnesium sulfate.

### 5.3.2 Protective Equipment and Precautions for Firefighters:

Firefighters should wear self-contained breathing apparatus (SCBA) and full fire-fighting turnout gear. Keep containers/storage vessels in fire area cooled with water spray.

## Section 6: ACCIDENTAL RELEASE MEASURES

**6.1 Personal Precautions:** Use personal protective equipment specified in Section 8. Isolate the release area and deny entry to unnecessary, unprotected and untrained personnel.

**6.2 Environmental Precautions:** Keep out of "waters of the United States" because of potential aquatic toxicity.

**6.3 Methods of Containment:**

**Small Release:** Confine and absorb small releases with sand, earth or other inert absorbents.

**Large Release:** Shut off release if safe to do so. Dike spill area with earth, sand or other inert absorbents to prevent runoff into surface waterways (potential aquatic toxicity), storm drains or sewers.

**6.4 Method for Cleanup:**

**Small Release:** Shovel up absorbed material and place in drums for disposal as a chemical waste or recycle as a fertilizer as the original product was intended.

**Large Release:** Recover as much of the spilled product as possible using portable pump and hoses. Use as originally intended or dispose of as a chemical waste. Treat remaining material as a small release (above).

## Section 7: HANDLING and STORAGE

**7.1 Handling:** Avoid contact with eyes. Use only in a well-ventilated area. Wash thoroughly after handling. Avoid prolonged or repeated breathing of vapors. Avoid prolonged or repeated contact with the skin.

**7.2 Storage:** Store in well-ventilated areas. Do not store combustibles in the area of storage vessels. Keep away from any sources of heat or flame. Store totes and smaller containers out of direct sunlight at moderate temperatures. (See Section 10.5 for materials of construction.)

## Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

**8.1 Exposure Guidelines:**

| Chemical | OSHA PELs | | ACGIH TLVs | |
|---|---|---|---|---|
| | TWA | STEL/C | TWA | STEL |
| Thiosulfuric acid ($H_2S_2O_3$), magnesium salt | None | None | None | None |
| Magnesium sulfate | None | None | None | None |
| Water | None | None | None | None |

**8.2 Engineering Controls:** Use adequate exhaust ventilation to prevent inhalation of product vapors. Keep eye wash/safety showers in areas where product is commonly handled.

**8.3 Personal Protective Equipment (PPE):**

**8.3.1 Eye/Face Protection:** Chemical goggles and a full face shield.

**8.3.2 Skin Protection:** Neoprene rubber gloves and apron should be worn to prevent repeated or prolonged contact with the liquid. Wash contaminated clothing prior to reuse.

**8.3.3 Respiratory Protection:** None generally required. If conditions exist where mist may be generated, a NIOSH/MSHA approved mist respirator should be worn.

**8.3.4 Hygiene Considerations:** There are no known hazards associated with this product when used as recommended, however common good industrial hygiene practices should be followed, such as washing thoroughly after handling and before eating or drinking.

## Section 9: PHYSICAL and CHEMICAL PROPERTIES

| | |
|---|---|
| **9.1 Appearance:** | Clear, colorless liquid/slight sulfur odor. |
| **9.2 Odor:** | Slight sulfur odor |
| **9.3 Odor Threshold:** | Not determined |
| **9.4 pH:** | 6.5 - 9.0 (*Typical*) |
| **9.5 Melting Point/Freezing Point:** | Salt-out temperature <25°F (<-3.9°C) *Typical.* |
| **9.6 Boiling Point:** | Not determined |
| **9.7 Flash Point:** | Not applicable |
| **9.8 Evaporation Rate:** | Not known |
| **9.9 Flammability:** | Not applicable |
| **9.10 Upper/Lower Flammability Limits:** | Not applicable |
| **9.11 Vapor Pressure:** | Not determined |
| **9.12 Vapor Density:** | Not determined |
| **9.13 Relative Density:** | 1.25 (10.4 lbs/gal) (*Typical)* |
| **9.14 Solubility:** | Complete |
| **9.15 Partition Coefficient:** | No data available. |
| **9.16 Auto-ignition Temperature:** | Not applicable |
| **9.17 Decomposition Temperature:** | Not determined |
| **9.18 Viscosity:** | 0.03549 Cp @ 20°C |

## Section 10: STABILITY and REACTIVITY

| | |
|---|---|
| **10.1 Reactivity:** | Avoid interaction with heat (flames), oxidizers, acids or alkalis (See details below in this section). |
| **10.2 Chemical Stability:** | MagThio® is a stable material under normal (ambient) temperature and pressure. |
| **10.3 Possibility of Hazardous Reactions:** | Strong oxidizers such as nitrates, or chlorates can cause explosive mixtures if heated to dryness. |
| **10.4 Conditions to Avoid:** | High temperatures, fire conditions. |
| **10.5 Incompatible Materials:** | Strong oxidizers (See section 10.3). Acids will cause the release of Sulfur dioxide, a severe respiratory irritant. **Magnesium thiosulfate is not compatible with Copper, Zinc or their alloys including brass, bronze or galvanized materials.** These materials should not be utilized in handling systems or storage containers for this product. |

**10.6 Hazardous Decomposition Products:** Heating this product will evolve Sulfur dioxide. Heating to dryness will cause the production of Magnesium sulfate, Sulfur and Oxides of Sulfur. Sulfur dioxide is a severe respiratory irritant.

## Section 11: TOXICOLOGICAL INFORMATION

**11.1 Oral:** Intraperitoneal-Rat $LD_{LO}$: 805 mg/kg (magnesium thiosulfate).
Intravenous-Rat $LD_{LO}$: 103 mg/kg (magnesium thiosulfate).

**11.2 Dermal:** Subcutaneous-Mouse $LD_{50}$: 850 mg/kg (magnesium thiosulfate).

**11.3 Inhalation:** No data available.

**11.4 Eyes:** No data available.

**11.5 Chronic/Carcinogenicity:** Not listed as a carcinogen by NTP, IARC or OSHA.

**11.6 Teratology:** No data available.

**11.7 Reproduction:** No data available.

**11.8 Mutagenicity:** No data available.

## Section 12: ECOLOGICAL INFORMATION

**12.1 Ecotoxicity:** No data available.

**12.2 Persistence & Degradability:** No data available.

**12.3 Bioaccumulative Potential:** No data available.

**12.4 Mobility in Soil:** No data available.

**12.5 Other Adverse Effects:** No data available.

## Section 13: DISPOSAL CONSIDERATIONS

Consult federal, state and local regulations for disposal requirements.

## Section 14: TRANSPORT INFORMATION

**14.1 Basic Shipping Description:**

| | |
|---|---|
| **14.1.1 Proper Shipping Name:** | Magnesium thiosulfate solution *(Not regulated by DOT)* |
| **14.1.2 Hazard Classes:** | Not applicable |
| **14.1.3 Identification Number:** | Not applicable |
| **14.1.4 Packing Group:** | Not applicable |
| **14.1.5 Hazardous Substance:** | No |
| **14.1.6 Marine Pollutant:** | No |

**14.2 Additional Information:**

**14.2.1 Other DOT Requirements:**

| | |
|---|---|
| **14.2.1.1 Reportable Quantity:** | No |
| **14.2.1.2 Placard(s):** | Not applicable |
| **14.2.1.3 Label(s):** | Not applicable |

**14.2.2 USCG Classification:** Not classified

**14.2.3 International Transportation:**

| | |
|---|---|
| **14.2.3.1 IMO:** | Not regulated |
| **14.2.3.2 IATA:** | Not regulated |
| **14.2.3.3 TDG (Canada):** | Not regulated |
| **14.2.3.4 ADR (Europe):** | Not regulated |
| **14.2.3.5 ADG (Australia):** | Not regulated |

**14.2.4 Emergency Response Guide:** Not applicable

**14.2.5 ERAP - Canada:** Not applicable

**14.2.6 Special Precautions:** Not applicable

## Section 15: REGULATORY INFORMATION

**15.1 U.S. Federal Regulations:**

**15.1.1 OSHA:** This product is a not considered hazardous under the criteria of the Federal OSHA Hazard Communication Standard (29 CFR 1910.1200).

**15.1.2 TSCA:** Product is contained in USEPA Toxic Substance Control Act Inventory.

**15.1.3 CERCLA:** Reportable Quantity – No

**15.1.4 SARA Title III:**

| | | |
|---|---|---|
| **15.1.4.1 Extremely Hazardous Substance (EHS):** | No | |
| **15.1.4.2 Section 312 (Tier II) Ratings:** | Immediate (acute) | No |
| | Fire | No |
| | Sudden Release | No |
| | Reactivity | No |
| | Delayed (chronic) | No |
| **15.1.4.3 Section 313 (FORM R):** | Not applicable | |
| **15.1.5 RCRA**: | Not applicable | |
| **15.1.6 CAA:** Hazardous Air Pollutant (HAP) | Not applicable | |

**15.2 International Regulations:**

**15.2.1 Canada:**

| | |
|---|---|
| **15.2.1.1 WHMIS:** | Not applicable |
| **15.2.2.2 DSL/NDSL:** | Listed in NDSL, Record #: 33318 |

**15.3 State Regulations:**

| | |
|---|---|
| **15.3.1 CA Proposition 65:** | Not applicable |

## Section 16: OTHER INFORMATION

**REVISIONS:** This SDS was reformatted to comply with the new Hazard Communications Standard dated March 26, 2012, by the regulatory Affairs Department of Tessenderlo Kerley, Inc. 7/15/2013.
Revised multiple sections to correct wording and formatting. 3/10/2015.
Revised sections 3, 5, 8, 11, 14 and 15. 6/10/2016.
Revised Section 1. 1/3/2020.