1. Identification

1.1. Product identifier
Product Identity: Chemurgic's Magnesium 4 Ligno +
Alternate Names: Common Name: Fertilizing compound, liquid.
Chemical Description: Magnesium lignosulfonate complex, aqueous solution.

1.2. Relevant identified uses of the substance or mixture and uses advised against
Intended use: See Technical Data Sheet.
Application Method: See Technical Data Sheet.

1.3. Details of the supplier of the safety data sheet
Company Name: Chemurgic Agricultural Chemicals, Inc.
P.O. Box 2106
Turlock, CA 95381

Customer Service:
Chemurgic Agricultural Chemicals, Inc.
DAYS: (209) 634-2951
EVES: (209) 652-7260

24-Hour Emergency Telephone Number
INFOTRAC: 1-800-535-5053
EPA National Response Center: (800) 424-8802

2. Hazard(s) identification

2.1. Classification of the substance or mixture
No applicable GHS categories.

2.2. Label elements
Using the Toxicity Data listed in section 11 and 12 the product is labeled as follows.

No applicable GHS categories.

[Prevention]:
No GHS prevention statements

[Response]:
No GHS response statements

[Storage]:
No GHS storage statements

[Disposal]:
No GHS disposal statements
3. Composition/information on ingredients

This product contains the following substances that present a hazard within the meaning of the relevant State and Federal Hazardous Substances regulations.

<table>
<thead>
<tr>
<th>Ingredient/Chemical Designations</th>
<th>Weight %</th>
<th>GHS Classification</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Magnesium sulfate heptahydrate</td>
<td>1.0 - 10</td>
<td>Not Classified</td>
<td>[1]</td>
</tr>
<tr>
<td>CAS Number: 0010034-99-8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lignosulfonic acid, sodium salt</td>
<td>1.0 - 10</td>
<td>Not Classified</td>
<td>[1]</td>
</tr>
<tr>
<td>CAS Number: 0008061-51-6</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

[1] Substance classified with a health or environmental hazard.
*The full texts of the phrases are shown in Section 16.

4. First aid measures

4.1. Description of first aid measures

**General**
In all cases of doubt, or when symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person.

**Inhalation**
Remove to fresh air, keep patient warm and at rest. If breathing is irregular or stopped, give artificial respiration. If unconscious place in the recovery position and obtain immediate medical attention. Give nothing by mouth.

**Eyes**
Irrigate copiously with clean water for at least 15 minutes, holding the eyelids apart and seek medical attention.

**Skin**
Remove contaminated clothing. Wash skin thoroughly with soap and water or use a recognized skin cleanser.

**Ingestion**
If conscious and alert, drink water or milk to dilute, then induce vomiting. Call a physician or Poison Control Center immediately.

4.2. Most important symptoms and effects, both acute and delayed

**Overview**
Eyes: Mild irritant. May cause redness.
Skin: Mild irritant, especially from prolonged exposure. May cause redness.
Ingestion: May cause stomach cramps and/or nausea.
Inhalation: None expected but inhalation of aerosol mist may cause mild irritation of nasal mucous membranes.

5. Fire-fighting measures

5.1. Extinguishing media
As appropriate for surrounding fire.

5.2. Special hazards arising from the substance or mixture
Hazardous decomposition: Thermal degradation at high temperatures above 575 C (1067 F) may produce sulfur trioxide.

5.3. Advice for fire-fighters
Wear positive pressure, self-contained breathing apparatus and goggles. Contain any liquid runoff.

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Put on appropriate personal protective equipment (see section 8).

6.2. Environmental precautions
Do not allow spills to enter drains or waterways.
Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

6.3. Methods and material for containment and cleaning up
Prevent product spillage from entering drinking water supplies or streams. Collect liquid or absorb onto absorbent material and package for disposal.

7. Handling and storage

7.1. Precautions for safe handling
Transfer products using chemical-resistant plastic or stainless steel tanks, pumps, valves, etc. Avoid contact with eyes, skin and clothing. Avoid inhalation of spray mists. Wash thoroughly with water after handling.

7.2. Conditions for safe storage, including any incompatibilities
Handle containers carefully to prevent damage and spillage.
Incompatible materials: Contact with brass or strong oxidizing agents.
Store in plastic or stainless steel container in a cool, well-ventilated, dry place at temperatures above 40 F. Do not store in contact with brass. Do not store near food or feeds. Do not stack pallets more than two high. Keep out of reach of children.

7.3. Specific end use(s)
No data available.

8. Exposure controls and personal protection

8.1. Control parameters

<table>
<thead>
<tr>
<th>CAS No.</th>
<th>Ingredient</th>
<th>Source</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>0008061-51-6</td>
<td>Lignosulfonic acid, sodium salt</td>
<td>OSHA</td>
<td>No Established Limit</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ACGIH</td>
<td>No Established Limit</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NIOSH</td>
<td>No Established Limit</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Supplier</td>
<td>No Established Limit</td>
</tr>
<tr>
<td>0010034-99-8</td>
<td>Magnesium sulfate heptahydrate</td>
<td>OSHA</td>
<td>No Established Limit</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ACGIH</td>
<td>No Established Limit</td>
</tr>
</tbody>
</table>
8.2. Exposure controls

Respiratory If workers are exposed to concentrations above the exposure limit they must use the appropriate, certified respirators.

Eyes Chemical dust/splash goggles or full-face shield to prevent eye contact. As a general rule, do not wear contact lenses when handling.

Skin Impervious gloves and clothes.

Engineering Controls Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and any vapor below occupational exposure limits suitable respiratory protection must be worn.

Other Work Practices Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

9. Physical and chemical properties

Appearance Dark Brown Liquid
Odor Slight lignin odor
Odor threshold Not Measured
pH Not Measured
Melting point / freezing point Not Measured
Initial boiling point and boiling range Not Measured
Flash Point > 200 F (ASTM D-56)
Evaporation rate (Ether = 1) Same as water
Flammability (solid, gas) Not Applicable
Upper/lower flammability or explosive limits
   Lower Explosive Limit: Not Measured
   Upper Explosive Limit: Not Measured
Vapor pressure (Pa) 760 mmHg
Vapor Density < 1.0
Specific Gravity Not Measured
9.2. Other information
No other relevant information.

10. Stability and reactivity

10.1. Reactivity
Hazardous Polymerization will not occur.

10.2. Chemical stability
Stable under normal circumstances.

10.3. Possibility of hazardous reactions
No data available.

10.4. Conditions to avoid
No data available.

10.5. Incompatible materials
Contact with brass or strong oxidizing agents.

10.6. Hazardous decomposition products
Thermal degradation at high temperatures above 575 C (1067 F) may produce sulfur trioxide.

11. Toxicological information

Acute toxicity

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Oral LD50, mg/kg</th>
<th>Skin LD50, mg/kg</th>
<th>Inhalation Vapor LD50, mg/L/4hr</th>
<th>Inhalation Dust/Mist LD50, mg/L/4hr</th>
<th>Inhalation Gas LD50, ppm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Magnesium sulfate heptahydrate - (10034-99-8)</td>
<td>No data available</td>
<td>No data available</td>
<td>No data available</td>
<td>No data available</td>
<td>No data available</td>
</tr>
<tr>
<td>Lignosulfonic acid, sodium salt - (8061-51-6)</td>
<td>No data available</td>
<td>No data available</td>
<td>No data available</td>
<td>No data available</td>
<td>No data available</td>
</tr>
</tbody>
</table>

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).
12. Ecological information

12.1. Toxicity
No additional information provided for this product. See Section 3 for chemical specific data.

Aquatic Ecotoxicity

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>96 hr LC50 fish, mg/l</th>
<th>48 hr EC50 crustacea, mg/l</th>
<th>ErC50 algae, mg/l</th>
</tr>
</thead>
<tbody>
<tr>
<td>Magnesium sulfate heptahydrate - (10034-99-8)</td>
<td>Not Available</td>
<td>Not Available</td>
<td>Not Available</td>
</tr>
<tr>
<td>Lignosulfonic acid, sodium salt - (8061-51-6)</td>
<td>Not Available</td>
<td>Not Available</td>
<td>Not Available</td>
</tr>
</tbody>
</table>

12.2. Persistence and degradability
There is no data available on the preparation itself.

12.3. Bioaccumulative potential
Not Measured

12.4. Mobility in soil
No data available.

12.5. Results of PBT and vPvB assessment
This product contains no PBT/vPvB chemicals.

12.6. Other adverse effects
No data available.
13. Disposal considerations

13.1. Waste treatment methods
Observe all federal, state and local regulations when disposing of this substance.

14. Transport information

<table>
<thead>
<tr>
<th>14.1. UN number</th>
<th>DOT (Domestic Surface Transportation)</th>
<th>IMO / IMDG (Ocean Transportation)</th>
<th>ICAO/IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Applicable</td>
<td>Not Applicable</td>
<td>Not Regulated</td>
<td>Not Regulated</td>
</tr>
</tbody>
</table>

14.2. UN proper shipping name
Not Regulated

14.3. Transport hazard class(es)
DOT Hazard Class: Not Applicable
IMDG: Not Applicable
Air Class: Not Applicable

14.4. Packing group
Not Applicable

14.5. Environmental hazards
IMDG
Marine Pollutant: No

14.6. Special precautions for user
No further information

15. Regulatory information

Regulatory Overview
The regulatory data in Section 15 is not intended to be all-inclusive, only selected regulations are represented.

Toxic Substance Control Act (TSCA)
All components of this material are either listed or exempt from listing on the TSCA Inventory.

WHMIS Classification
Not Regulated

US EPA Tier II Hazards

<table>
<thead>
<tr>
<th>Fire</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sudden Release of Pressure</td>
<td>No</td>
</tr>
<tr>
<td>Reactive</td>
<td>No</td>
</tr>
<tr>
<td>Immediate (Acute)</td>
<td>No</td>
</tr>
<tr>
<td>Delayed (Chronic)</td>
<td>No</td>
</tr>
</tbody>
</table>

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.

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 and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by exposure to our products. Customers/users of this product must comply with all applicable health and safety laws, regulations, and orders.

The full text of the phrases appearing in section 3 is: Not applicable

This is the first version in the GHS SDS format. Listings of changes from previous versions in other formats are not applicable.

While the information contained herein is based on data considered accurate and was compiled to comply with the Federal Hazard Communication Standard and the California Hazardous Substances Information and Training Act, it is provided for guidance only. Chemurgic Agricultural Chemicals, Inc. does not guarantee its accuracy or completeness. Health and safety precautions in this data sheet may not be adequate for all individuals and/or situations. It is the user’s obligation to evaluate and use this product safely and to comply with all applicable laws and regulations; in so doing, user assumes all risk in use of the material. The information contained herein is not to be taken as a warranty or representation for which Chemurgic Agricultural Chemicals, Inc. assumes legal responsibility.

End of Document