1. IDENTIFICATION

Product Identifier
Product Name Zinc Sulfate Monohydrate

Other means of identification
SDS # CNI-040
UN/ID No UN3077

Recommended use of the chemical and restrictions on use
Recommended Use Plant Nutrients.

Details of the supplier of the safety data sheet
Supplier Address
CNI AgriMinerals
P.O. Box 3706
Albany, GA 31706

Emergency Telephone Number
Company Phone Number 1-229-883-5538 (Business)
1-229-439-0842 (fax)
Emergency Telephone (24 hr) Chemtrec 1-800-424-9300 (North America) 1-703-527-3887 (International)

2. HAZARDS IDENTIFICATION

Appearance White free-flowing granules Physical State Solid Odor Essentially odorless

Classification

<table>
<thead>
<tr>
<th>Hazard</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity - Oral</td>
<td>Category 4</td>
</tr>
<tr>
<td>Serious eye damage/eye irritation</td>
<td>Category 2</td>
</tr>
</tbody>
</table>

Signal Word
Warning

Hazard Statements
Harmful if swallowed
Causes eye irritation
Precautionary Statements - Prevention
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Wear protective gloves/protective clothing/eye protection/face protection

Precautionary Statements - Response
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 SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant

Other Hazards
Very toxic to aquatic life with long lasting effects

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No</th>
<th>Weight-%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zinc sulfate, monohydrate</td>
<td>7446-19-7</td>
<td>&gt;99</td>
</tr>
<tr>
<td>Water Soluble Zinc</td>
<td>Proprietary</td>
<td>35.5% (Available from Zinc sulfate monohydrate)</td>
</tr>
<tr>
<td>Combined Sulfur</td>
<td>Proprietary</td>
<td>17.00% (Available from Zinc sulfate monohydrate)</td>
</tr>
</tbody>
</table>

**If Chemical Name/CAS No is “proprietary” and/or Weight-% is listed as a range, the specific chemical identity and/or percentage of composition has been withheld as a trade secret.**

4. FIRST-AID MEASURES

First Aid Measures

**General Advice**
Provide this SDS to medical personnel for treatment.

**Eye Contact**
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If eye irritation persists: Get medical advice/attention.

**Skin Contact**
Remove contaminated clothing. Wash skin with soap and water. Wash clothing before reuse. Get medical attention if irritation develops or persists.

**Inhalation**
Remove to fresh air. Get medical attention if necessary.

**Ingestion**
Drink plenty of water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention if you feel unwell.
Most important symptoms and effects

Symptoms
Causes eye irritation. Direct contact with skin can cause irritation or redness. May cause irritation to the mucous membranes and upper respiratory tract. Harmful if swallowed. Ingestion may cause symptoms of gastrointestinal irritation including abdominal discomfort, nausea, vomiting, and diarrhea.

Indication of any immediate medical attention and special treatment needed

Notes to Physician
Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media
Do not release runoff from fire control methods to sewers or waterways. Carbon dioxide (CO2). Dry chemical. Foam.

Unsuitable Extinguishing Media
Do not spray water directly on burning material.

Specific Hazards Arising from the Chemical
Product is not explosive. Product is not flammable.

Hazardous Combustion Products
May release toxic oxides of Zinc and Sulfur in a fire.

Protective equipment and precautions for firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Move containers from fire area if you can do it without risk. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply. Avoid breathing vapors, keep upwind.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions
Use personal protective equipment as required. Avoid creating dust. Ventilate affected area.

For Emergency Responders
Follow applicable OSHA regulations (29 CFR 1910.120).

Environmental Precautions
Prevent runoff to sewers, streams, and other bodies of water. See Section 12 for additional Ecological Information. See Section 13: DISPOSAL CONSIDERATIONS.

Methods and material for containment and cleaning up

Methods for Containment
Prevent further leakage or spillage if safe to do so. For large spills, dike far ahead of spill for later disposal.

Methods for Clean-Up
Clean up in accordance with all applicable regulations. Notify and consult with proper regulatory authorities. Sweep up with a minimum of dusting. Pick up and transfer to properly labeled containers. Ground and bond containers when transferring material.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on Safe Handling
Handle in accordance with good industrial hygiene and safety practice. Use personal protection recommended in Section 8. Use in accordance with product label instructions. Avoid contact with skin, eyes or clothing. Avoid generation of dust. Avoid breathing dusts. Use only in well-ventilated areas. Wash face, hands and any exposed skin thoroughly after handling. Do not eat, drink, smoke, or apply cosmetics while handling this product. Product should only be handled by trained personnel.
Conditions for safe storage, including any incompatibilities

Storage Conditions

Packaging Materials
Do not reuse container. Empty containers should be triple rinsed and use the rinsate in product tank.

Incompatible Materials
Oxidizers.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines
This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies

Appropriate engineering controls

Engineering Controls
Ensure adequate ventilation, especially in confined areas. Eyewash stations. Showers.

Individual protection measures, such as personal protective equipment

Eye/Face Protection
Chemical anti-splash safety goggles. Refer to 29 CFR 1910.133 for eye and face protection regulations.

Skin and Body Protection
Wear chemically protective gloves to prevent skin contact. Wear protective clothing. Contaminated Equipment: Separate contaminated work clothes from street clothes. Launder before reuse. Remove this material from your shoes and clean personal protective equipment. Refer to 29 CFR 1910.138 for appropriate skin and body protection.

Respiratory Protection
Respiratory protection suitable for ammonia vapors may be needed. Follow OSHA respirator regulations (29 CFR 1910.134) and, if necessary, wear a MSHA/NIOSH approved respirator. Seek professional advice prior to respirator selection and use. Select respirator based on its suitability to provide adequate worker protection for given working conditions, level of airborne contamination, and presence of sufficient oxygen. WARNING!: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres. If respirators are used, OSHA requires a written respiratory program that includes at least: medical certification, training, fit-testing, periodic environmental monitoring, maintenance, inspection, cleaning, and convenient, sanitary storage areas.

General Hygiene Considerations
Never eat, drink, or smoke in work areas. Practice good personal hygiene after using this material, especially before eating, drinking, smoking, using the toilet, or applying cosmetics.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
<th>Remarks • Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical State</td>
<td>Solid</td>
<td></td>
</tr>
<tr>
<td>Appearance</td>
<td>White free-flowing granules</td>
<td></td>
</tr>
<tr>
<td>Color</td>
<td>White</td>
<td></td>
</tr>
<tr>
<td>Odor</td>
<td>Essentially odorless</td>
<td></td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td>pH</td>
<td>5.0 @ 10% Solution</td>
<td>@ 15 °C (59°F)</td>
</tr>
<tr>
<td>Melting Point/Freezing Point</td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td>Boiling Point/Boiling Range</td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td>Flash Point</td>
<td>Not available</td>
<td></td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>Not determined</td>
<td></td>
</tr>
</tbody>
</table>
Flammability (Solid, Gas) Not determined
Upper Flammability Limits Not available
Lower Flammability Limit Not available
Vapor Pressure Not available
Vapor Density Not available
Specific Gravity 3.28 (Water = 1)
Water Solubility 30% @ 21 °C/ 70 °F
Solubility in other solvents Not determined
Partition Coefficient Not determined
Auto-ignition Temperature Not determined
Decomposition Temperature Not determined
Kinematic Viscosity Not determined
Dynamic Viscosity Not determined
Explosive Properties Not an explosive
Oxidizing Properties Not determined

10. STABILITY AND REACTIVITY

Reactivity
Not reactive under normal conditions.

Chemical Stability
Stable under recommended storage conditions.

Possibility of Hazardous Reactions
None under normal processing.

Hazardous Polymerization Hazardous polymerization does not occur.

Conditions to Avoid
See Sec. 7 Handling & Storage.

Incompatible Materials
Oxidizers.

Hazardous Decomposition Products
May release toxic oxides of Zinc and Sulfur in a fire.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Eye Contact Causes eye irritation.
Skin Contact Avoid contact with skin.
Inhalation Avoid breathing vapors or mists.
Ingestion Harmful if swallowed.

Component Information

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Oral LD50</th>
<th>Dermal LD50</th>
<th>Inhalation LC50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Soluble Zinc</td>
<td>&gt; 8,437 mg/kg (rat)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Combined Sulfur</td>
<td>&gt; 3000 mg/kg ( Rat )</td>
<td>&gt; 2000 mg/kg ( Rabbit )</td>
<td>&gt; 9.23 mg/L ( Rat ) 4 h</td>
</tr>
</tbody>
</table>

Page 5 / 9
Information on physical, chemical and toxicological effects

Symptoms

Please see section 4 of this SDS for symptoms.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Carcinogenicity

Based on the information provided, this product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.

Numerical measures of toxicity

Not determined

12. ECOLOGICAL INFORMATION

Ecotoxicity

Very toxic to aquatic life with long lasting effects.

Component Information

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Algae/aquatic plants</th>
<th>Fish</th>
<th>Toxicity to microorganisms</th>
<th>Crustacea</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Soluble Zinc</td>
<td>0.11 - 0.271: 96 h</td>
<td>Pseudokirchneriella subcapitata mg/L EC50</td>
<td></td>
<td>0.139 - 0.908: 48 h</td>
</tr>
<tr>
<td></td>
<td>Pseudokirchneriella</td>
<td>subcapitata mg/L EC50 static 0.09 - 0.125: 72 h</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pseudokirchneriella subcapitata mg/L EC50 static</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.16 - 3.05: 96 h Pimephales promelas mg/L LC50 flow-through 0.211 -</td>
<td>2.66: 96 h Pimephales</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.269: 96 h Pimephales promelas mg/L LC50 static 30: 96 h Cyprinus</td>
<td>promelas mg/L LC50 static</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>carpio mg/L LC50 semi-static 7.8: 96 h Cyprinus carpio mg/L LC50</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>static 3.5: 96 h Pimephales promelas mg/L LC50 static 0.24: 96 h</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Oncorhynchus mykiss mg/L LC50 static 0.41: 96 h Oncorhynchus mykiss</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>mg/L LC50 semi-static 0.41: 96 h Oncorhynchus mykiss mg/L LC50</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>static 0.41: 96 h Oncorhynchus mykiss mg/L LC50 static 0.41: 96 h</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lepomis macrochirus mg/L LC50 static 14: 96 h</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>866: 96 h Brachydanio rerio mg/L LC50 static 14: 96 h Lepomis</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>macrochirus mg/L LC50 static 180: 96 h Oncorhynchus mykiss mg/L LC50</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>static 180: 96 h Oncorhynchus mykiss mg/L LC50 static 180: 96 h</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Persistence/Degradability

Not determined.

Bioaccumulation

Not determined.

Mobility

Not determined.

Other Adverse Effects

Not determined.
13. DISPOSAL CONSIDERATIONS

Waste Treatment Methods

Disposal of Wastes
Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated Packaging
Disposal should be in accordance with applicable regional, national and local laws and regulations. Triple rinse empty container, then offer for recycling, reuse, or reconditioning.

California Hazardous Waste Status

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>California Hazardous Waste Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zinc sulfate, monohydrate</td>
<td>Toxic</td>
</tr>
<tr>
<td>7446-19-7</td>
<td></td>
</tr>
<tr>
<td>Water Soluble Zinc</td>
<td>Toxic</td>
</tr>
</tbody>
</table>

14. TRANSPORT INFORMATION

Note
Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances.

DOT
UN/ID No: UN3077
Proper Shipping Name: Environmentally hazardous substance, solid, n.o.s. (Zinc sulfate monohydrate)
Hazard Class: 9
Packing Group: III
Reportable Quantity (RQ): Not regulated in packages containing <1000 lb. of zinc sulfate monohydrate

IATA
Not regulated

IMDG
Marine Pollutant: This material may meet the definition of a marine pollutant

15. REGULATORY INFORMATION

International Inventories

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>TSCA</th>
<th>DSL</th>
<th>NDSL</th>
<th>EINECS</th>
<th>ELINCS</th>
<th>ENCS</th>
<th>IECSC</th>
<th>KECL</th>
<th>PICCS</th>
<th>AICS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zinc sulfate, monohydrate</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water Soluble Zinc</td>
<td>Present</td>
<td>X</td>
<td></td>
<td>Present</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Combined Sulfur</td>
<td>Present</td>
<td>X</td>
<td></td>
<td>Present</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Legend:
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances
US Federal Regulations

CERCLA

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Hazardous Substances RQs</th>
<th>CERCLA/SARA RQ</th>
<th>Reportable Quantity (RQ)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zinc sulfate, monohydrate 7446-19-7</td>
<td>1000 lbs</td>
<td>1000 lbs</td>
<td>1000 lbs</td>
</tr>
<tr>
<td>Water Soluble Zinc</td>
<td>1000 lb</td>
<td></td>
<td>RQ 454 kg final RQ</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>RQ 1000 lb final RQ</td>
</tr>
</tbody>
</table>

SARA 311/312 Hazard Categories

- Acute Health Hazard: No
- Chronic Health Hazard: No
- Fire Hazard: No
- Sudden Release of Pressure Hazard: No
- Reactive Hazard: No

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No</th>
<th>Weight-%</th>
<th>SARA 313 - Threshold Values %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zinc sulfate, monohydrate 7446-19-7</td>
<td>7446-19-7</td>
<td>99</td>
<td>1.0</td>
</tr>
<tr>
<td>Water Soluble Zinc</td>
<td></td>
<td>35.5% (Available from Zinc sulfate monohydrate)</td>
<td>1.0</td>
</tr>
</tbody>
</table>

CWA (Clean Water Act)

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CWA - Reportable Quantities</th>
<th>CWA - Toxic Pollutants</th>
<th>CWA - Priority Pollutants</th>
<th>CWA - Hazardous Substances</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zinc sulfate, monohydrate</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water Soluble Zinc</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

US State Regulations

California Proposition 65
This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>New Jersey</th>
<th>Massachusetts</th>
<th>Pennsylvania</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zinc sulfate, monohydrate 7446-19-7</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Water Soluble Zinc</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Combined Sulfur</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>
## 16. OTHER INFORMATION

<table>
<thead>
<tr>
<th>NFPA</th>
<th>Health Hazards</th>
<th>Flammability</th>
<th>Instability</th>
<th>Special Hazards</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>0</td>
<td>0</td>
<td>Not determined</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HMIS</th>
<th>Health Hazards</th>
<th>Flammability</th>
<th>Physical Hazards</th>
<th>Personal Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not determined</td>
<td>Not determined</td>
<td>Not determined</td>
<td>Not determined</td>
</tr>
</tbody>
</table>

Issue Date: 09-Sep-2015  
Revision Date: 11-Sep-2015  
Revision Note: New format

**Disclaimer**
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The 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, unless specified in the text.

**End of Safety Data Sheet**