1. IDENTIFICATION

Product Identifier
Product Name PolyAmine Zinc Organic

Other means of identification
SDS # VLS-039

Other Information
Factory Formula: 1211.

Recommended use of the chemical and restrictions on use
Recommended Use Fertilizer.

Details of the supplier of the safety data sheet
Supplier Address Verdesian Life Sciences, U.S., LLC.
1001 Winstead Drive, Suite 480
Cary, NC 27513

Emergency Telephone Number
Company Phone Number Business Phone: (800) 868-6446
Fax: (919) 535-3652
Emergency Telephone (24 hr) INFOTRAC 1-352-323-3500 (International)
1-800-535-5053 (North America)

2. HAZARDS IDENTIFICATION

Appearance Dark liquid
Physical state Liquid
Odor Citrus

Classification

Serious eye damage/eye irritation Category 1

Signal Word Danger

Hazard statements
Causes serious eye damage

Precautionary Statements - Prevention
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
Immediately call a poison center or doctor/physician
Other hazards
Very toxic to aquatic life with long lasting effects

Unknown Acute Toxicity
1% of the mixture consists of ingredient(s) of unknown toxicity

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</td>
<td>7733-02-0</td>
<td>1-10</td>
</tr>
<tr>
<td>Organic Acid</td>
<td>Proprietary</td>
<td>1-10</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

- **Eye Contact**
  Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Seek immediate medical attention/advice.

- **Skin Contact**
  Wash with soap and water. Take off contaminated clothing. Wash contaminated clothing before reuse. If skin irritation persists, call a physician.

- **Inhalation**
  Remove to fresh air. Call a physician immediately.

- **Ingestion**
  Call a physician or poison control center immediately.

Most important symptoms and effects

- **Symptoms**
  Inhalation may cause irritation to nasal passages. Contact will cause irritation and redness to exposed areas.

Indication of any immediate medical attention and special treatment needed

- **Notes to Physician**
  Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Dry chemical. Carbon dioxide (CO2). Foam. Water spray (fog).

- **Unsuitable Extinguishing Media** Not determined.

Specific Hazards Arising from the Chemical
Combustion products may be toxic.

- **Hazardous Combustion Products** Nitrogen oxides (NOx).

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. Use water spray to keep fire-exposed containers cool. Do not release runoff from fire control methods to sewers or waterways.
6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions
Use personal protective equipment as required.

Environmental precautions

Methods and material for containment and cleaning up

Methods for Containment
Prevent further leakage or spillage if safe to do so.

Methods for Clean-Up
Absorb liquids by covering with clay or tuber absorbent material. Vacuum or sweep up material and place in a disposal container.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on Safe Handling
Handle in accordance with good industrial hygiene and safety practice. Observe precautions found on the label. Wash thoroughly after handling. Use personal protection recommended in Section 8.

Conditions for safe storage, including any incompatibilities

Storage Conditions
Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Do not contaminate food or feed stuffs. Protect from freezing.

Incompatible Materials
Strong oxidizers.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>NIOSH IDLH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organic Acid</td>
<td>-</td>
<td>15 mg / m3 (Total)</td>
<td>-</td>
</tr>
</tbody>
</table>

Appropriate engineering controls

Engineering Controls
Apply technical measures to comply with the occupational exposure limits.

Individual protection measures, such as personal protective equipment

Eye/Face Protection
Refer to 29 CFR 1910.133 for eye and face protection regulations.

Skin and Body Protection
Protective gloves are not required, but recommended. Wear suitable protective clothing.

Respiratory Protection
None normally required. If vapors may exceed acceptable levels, use an OSHA/NIOSH-approved respirator or mask for protection against pesticide dusts, mists, and vapors.

General Hygiene Considerations
Handle in accordance with good industrial hygiene and safety practice.
## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Physical state</strong></td>
<td>Liquid</td>
<td></td>
</tr>
<tr>
<td><strong>Appearance</strong></td>
<td>Dark liquid</td>
<td></td>
</tr>
<tr>
<td><strong>Odor</strong></td>
<td>Citrus</td>
<td></td>
</tr>
<tr>
<td><strong>Color</strong></td>
<td>Dark Colored Liquid</td>
<td></td>
</tr>
<tr>
<td><strong>Odor Threshold</strong></td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td><strong>pH</strong></td>
<td>2.85</td>
<td></td>
</tr>
<tr>
<td><strong>Melting point / freezing point</strong></td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td><strong>Boiling Point / Boiling Range</strong></td>
<td>100 °C / 212 °F</td>
<td></td>
</tr>
<tr>
<td><strong>Flash Point</strong></td>
<td>Does not flash</td>
<td></td>
</tr>
<tr>
<td><strong>Evaporation Rate</strong></td>
<td>Slower than butyl acetate</td>
<td></td>
</tr>
<tr>
<td><strong>Flammability (Solid, Gas)</strong></td>
<td>n/a-liquid</td>
<td></td>
</tr>
<tr>
<td><strong>Flammability Limit in Air</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper Flammability Limit</td>
<td>Not applicable</td>
<td></td>
</tr>
<tr>
<td>Lower Flammability Limit</td>
<td>Not applicable</td>
<td></td>
</tr>
<tr>
<td><strong>Vapor Pressure</strong></td>
<td>Not available</td>
<td></td>
</tr>
<tr>
<td><strong>Vapor Density</strong></td>
<td>Not available</td>
<td></td>
</tr>
<tr>
<td><strong>Relative Density</strong></td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td><strong>Water Solubility</strong></td>
<td>Miscible in water</td>
<td></td>
</tr>
<tr>
<td><strong>Solubility in other solvents</strong></td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td><strong>Partition Coefficient</strong></td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td><strong>Autoignition temperature</strong></td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td><strong>Decomposition Temperature</strong></td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td><strong>Kinematic Viscosity</strong></td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td><strong>Dynamic Viscosity</strong></td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td><strong>Explosive Properties</strong></td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td><strong>Oxidizing Properties</strong></td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td><strong>Density</strong></td>
<td>9.996 wt/gal</td>
<td></td>
</tr>
</tbody>
</table>

## 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
Excessive heat.

### Incompatible Materials
Strong oxidizers.

### Hazardous Decomposition Products
Nitrogen oxides (NOx).
11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Eye Contact Causes severe eye damage.

Skin Contact Avoid contact with skin.

Inhalation Avoid breathing vapors or mists.

Ingestion Do not taste or swallow.

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>Zinc sulfate 7733-02-0</td>
<td>= 1710 mg/kg (Rat)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Organic Acid</td>
<td>= 3000 mg/kg (Rat) = 3 g/kg (Rat)</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

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

The following values are calculated based on chapter 3.1 of the GHS document.

<table>
<thead>
<tr>
<th>Unknown Acute Toxicity</th>
<th>1 % of the mixture consists of ingredient(s) of unknown toxicity.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATEmix (oral)</td>
<td>7,937.00 mg/kg</td>
</tr>
</tbody>
</table>

12. ECOLOGICAL INFORMATION

Ecotoxicity

Very toxic to aquatic life with long lasting effects.

Persistence/Degradability

Not determined.

Bioaccumulation

Not determined.

Mobility

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Partition Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organic Acid</td>
<td>-1.72</td>
</tr>
</tbody>
</table>

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.

California Hazardous Waste Status

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>California Hazardous Waste Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zinc sulfate 7733-02-0</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
Not regulated

IATA
Not regulated

IMDG
Marine Pollutant
This product contains zinc sulfate which is considered a marine pollutant according to the Globally Harmonized System of the Classification and Labelling of Chemicals

15. REGULATORY INFORMATION

International Inventories

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>TSCA</th>
<th>DSL/NDSL</th>
<th>EINECS/E LINCS</th>
<th>ENCS</th>
<th>IECSC</th>
<th>KECL</th>
<th>PICCS</th>
<th>AICS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zinc sulfate 7733-02-0</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Organic Acid</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Yeast Extract</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</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/E LINCS** - 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 7733-02-0</td>
<td>1000 lb</td>
<td></td>
<td>RQ 1000 lb final RQ RQ 454 kg final RQ</td>
</tr>
</tbody>
</table>
SARA 311/312 Hazard Categories

- Acute Health Hazard: Yes
- 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

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</td>
<td>1000 lb</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</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>Health Hazards</td>
<td>Not determined</td>
<td>Not determined</td>
<td>Not determined</td>
<td>Not determined</td>
</tr>
<tr>
<td>Flammability</td>
<td>Not determined</td>
<td>Not determined</td>
<td>Not determined</td>
<td>Not determined</td>
</tr>
<tr>
<td>Instability</td>
<td>Not determined</td>
<td>Not determined</td>
<td>Not determined</td>
<td>Not determined</td>
</tr>
<tr>
<td>Special Hazards</td>
<td>Not determined</td>
<td>Not determined</td>
<td>Not determined</td>
<td>Not determined</td>
</tr>
</tbody>
</table>

Issue Date: 02-Jan-1998
Revision Date: 31-May-2018
Revision Note: Section 15

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