1. IDENTIFICATION

Product Identifier  
Product Name  AVAIL for Liquid Phosphate Fertilizers

Other means of identification  
SDS #  FFN: 04001

UN/ID No  UN1760

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 Phone: (919) 535-3652
Emergency Telephone (24 hr)  INFOTRAC 1-352-323-3500 (International)
1-800-535-5053 (North America)

2. HAZARDS IDENTIFICATION

Appearance  Tan to brown liquid  Physical State  Liquid  Odor  Characteristic

Classification

<table>
<thead>
<tr>
<th>Classification</th>
<th>Category</th>
<th>Sub-category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin corrosion/irritation</td>
<td>Category 1</td>
<td>Sub-category C</td>
</tr>
<tr>
<td>Serious eye damage/eye irritation</td>
<td>Category 1</td>
<td></td>
</tr>
</tbody>
</table>

Signal Word  
Danger

Hazard Statements  
Causes severe skin burns and eye damage

Precautionary Statements - Prevention  
Do not breathe dust/fume/gas/mist/vapors/spray
Wash face, hands and any exposed skin thoroughly after handling
Wear protective gloves/protective clothing/eye protection/face protection
Precautionary Statements - Response
Immediately call a poison center or doctor/physician
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
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
Wash contaminated clothing before reuse
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Immediately call a poison center or doctor/physician
IF SWALLOWED: rinse mouth. Do NOT induce vomiting

Precautionary Statements - Storage
Store locked up

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

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical Family</th>
<th>Carboxylated polymer.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical Name</td>
<td>Maleic-itaconic copolymer, partial ammonium salt</td>
</tr>
<tr>
<td>CAS No</td>
<td>701908-99-8</td>
</tr>
<tr>
<td>Weight-%</td>
<td>Proprietary</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. Immediate medical attention is required.

Skin Contact
Wash off immediately with plenty of water. Take off contaminated clothing. Wash contaminated clothing before reuse. If skin irritation persists, call a physician.

Inhalation
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen & get medical attention immediately.

Ingestion
Do not induce vomiting. Rinse mouth. Call a physician immediately.

Most important symptoms and effects

Symptoms
Causes severe skin burns and eye damage. Will cause gastrointestinal tract irritation.

Indication of any immediate medical attention and special treatment needed

Notes to Physician
Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media
Water spray, dry chemical, carbon dioxide, foam.

Unsuitable Extinguishing Media
Not determined.
Specific Hazards Arising from the Chemical
Toxic fumes may be given off when material is exposed to 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.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

<table>
<thead>
<tr>
<th>Personal Precautions</th>
<th>Use personal protective equipment as required.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Precautions</td>
<td>See Section 12 for additional Ecological Information.</td>
</tr>
</tbody>
</table>

Methods and material for containment and cleaning up

<table>
<thead>
<tr>
<th>Methods for Containment</th>
<th>Prevent further leakage or spillage if safe to do so.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methods for Clean-Up</td>
<td>Keep in suitable, closed containers for disposal.</td>
</tr>
</tbody>
</table>

7. HANDLING AND STORAGE

Precautions for safe handling

| Advice on Safe Handling | Use personal protection recommended in Section 8. Avoid contact with skin, eyes or clothing. Do not breathe vapors or spray mist. Wash face, hands, and any exposed skin thoroughly after handling. |

Conditions for safe storage, including any incompatibilities

<table>
<thead>
<tr>
<th>Storage Conditions</th>
<th>Keep containers tightly closed in a dry, cool and well-ventilated place. Store locked up.</th>
</tr>
</thead>
</table>

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

| No exposure limits noted for ingredient(s). The following information is given as general guidance |

Appropriate engineering controls

| Engineering Controls | Maintain eye wash fountain and quick-drench facilities in work area. |

Individual protection measures, such as personal protective equipment

<table>
<thead>
<tr>
<th>Eye/Face Protection</th>
<th>Use chemical safety goggles / face shield.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin and Body Protection</td>
<td>Chemical resistant protective gloves.</td>
</tr>
<tr>
<td>Respiratory Protection</td>
<td>Ensure adequate ventilation, especially in confined areas.</td>
</tr>
<tr>
<td>General Hygiene Considerations</td>
<td>Avoid contact with skin, eyes and clothing. After handling this product, wash hands before eating, drinking, or smoking. If contact occurs, remove contaminated clothing. If needed, take first aid action shown on section 4 of this SDS. Launder contaminated clothing before reuse.</td>
</tr>
</tbody>
</table>
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>Physical State</td>
<td>Liquid</td>
<td></td>
</tr>
<tr>
<td>Appearance</td>
<td>Tan to brown liquid</td>
<td></td>
</tr>
<tr>
<td>Color</td>
<td>Tan to brown</td>
<td></td>
</tr>
<tr>
<td>Odor</td>
<td>Characteristic</td>
<td></td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td>pH</td>
<td>~2.0</td>
<td></td>
</tr>
<tr>
<td>Melting Point/Freezing Point</td>
<td>-7.22 °C / 19 °F</td>
<td></td>
</tr>
<tr>
<td>Boiling Point/Boiling Range</td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td>Flash Point</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td>Flammability (Solid, Gas)</td>
<td>n/a-liquid</td>
<td></td>
</tr>
<tr>
<td>Upper Flammability Limits</td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td>Lower Flammability Limit</td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td>Vapor Density</td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>1.1-1.3</td>
<td></td>
</tr>
<tr>
<td>Water Solubility</td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td>Solubility in other solvents</td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td>Partition Coefficient</td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td>Auto-ignition Temperature</td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td>Kinematic Viscosity</td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td>Dynamic Viscosity</td>
<td>&lt;50 cP</td>
<td></td>
</tr>
<tr>
<td>Explosive Properties</td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td>Oxidizing Properties</td>
<td>Not determined</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
Exposure to excessively high pH may lead to ammonia gas evolution. Can react with metals to give off hydrogen, heat and/or steam. Can react with bases and metal oxides with high evolution of heat and/or steam. Can react with carbonates to give off carbon dioxide, heat and/or steam.

Conditions to Avoid
Incompatible Materials.

Incompatible Materials

Hazardous Decomposition Products
Carbon oxides. Nitrogen oxides (NOx).

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

<table>
<thead>
<tr>
<th>Product Information</th>
<th>To the best of our knowledge, the chemical, physical and toxicological properties of this material have not been thoroughly investigated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eye Contact</td>
<td>Causes severe eye damage.</td>
</tr>
</tbody>
</table>
Skin Contact Causes severe skin burns.

Inhalation May cause irritation to the mucous membranes and upper respiratory tract.

Ingestion Can cause gastrointestinal disturbance.

Component Information Not available

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 An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Component Information Not available

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.
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**: UN1760
- **Proper Shipping Name**: Corrosive Liquid, n.o.s (Maleic-itaconic copolymer, partial ammonium salt)
- **Hazard Class**: 8
- **Packing Group**: III

**IATA**
- **UN/ID No**: UN1760
- **Proper Shipping Name**: Corrosive Liquid, n.o.s (Maleic-itaconic copolymer, partial ammonium salt)
- **Hazard Class**: 8
- **Packing Group**: III

**IMDG**
- **UN/ID No**: UN1760
- **Proper Shipping Name**: Corrosive Liquid, n.o.s (Maleic-itaconic copolymer, partial ammonium salt)
- **Hazard Class**: 8
- **Packing Group**: III

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>Maleic-itaconic copolymer, partial ammonium salt</td>
<td>Present</td>
<td>X</td>
<td></td>
<td></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**
This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355).

**SARA 313**
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any 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)**
This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)
US State Regulations

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

U.S. State Right-to-Know Regulations
This product does not contain any substances regulated under applicable state right-to-know regulations

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></td>
<td>Not determined</td>
<td>Not determined</td>
<td>Not determined</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>2</td>
<td>0</td>
<td>1</td>
<td></td>
<td>B</td>
</tr>
</tbody>
</table>

Issue Date: 26-Dec-2014
Revision Date: 28-Mar-2016
Revision Note: New product

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