

Safety Data Sheet

Issue Date: 17-Nov-2000

Revision Date: 1-April-2016

Version 2

1. IDENTIFICATION

Product Identifier

Product Name PolyAmine Micro-Pak Organic

Other means of identification

SDS # FFN: 01215

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 Dark brown liquid **Physical State** Liquid **Odor** Citrus

Classification

Serious eye damage/eye irritation	Category 2
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Signal Word

Warning

Hazard Statements

Causes serious eye irritation



Precautionary Statements - Prevention

Wash face, hands and any exposed skin thoroughly after handling
Wear eye/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

Other Hazards

Very toxic to aquatic life with long lasting effects

Unknown Acute Toxicity

0.995% of the mixture consists of ingredient(s) of unknown toxicity

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%
Citric Acid	77-92-9	1-10
Zinc sulfate	7733-02-0	1.4
Manganese Sulfate Monohydrate	10034-96-5	1.2
Magnesium Sulfate heptahydrate	10034-99-8	<1
Ferrous Sulfate	7782-63-0	<1
Copper sulfate	7758-98-7	<1

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. If eye irritation persists: Get medical advice/attention.
Skin Contact	Wash off immediately with plenty of water.
Inhalation	Remove to fresh air. If breathing becomes difficult, call a physician.
Ingestion	Drink plenty of water or milk immediately. Follow with milk of magnesia, beaten eggs, or vegetable oil. Do not induce vomiting. Call a physician.

Most important symptoms and effects

Symptoms	May cause skin and eye irritation. May cause irritation to the mucous membranes and upper respiratory tract. Ingestion may result in nausea, vomiting, diarrhea, blood in vomit and stools, burning pain in mouth and throat, abdominal pain, lethargy, confusion, edema, leukocytosis, hyperglycemia, acidosis, shock, liver and kidney damage, and other gastrointestinal and neuralgic symptoms and damage. Ingestion by a child of more than 60 ml (2 ounces) or by an adult of more than 150 ml (5 ounces) may be fatal.
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Indication of any immediate medical attention and special treatment needed

Notes to Physician	Treat symptomatically.
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5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media Not determined.

Specific Hazards Arising from the Chemical

Non-flammable solution.

Hazardous Combustion Products Zinc oxide. Oxides of sulfur.

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

- Personal Precautions** Use personal protective equipment as required.
- Environmental Precautions** See Section 12 for additional Ecological Information.

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** Carefully neutralize with a dilute alkaline solution of either baking soda (sodium bicarbonate), soda ash, or lime. Clean up in accordance with all applicable regulations.

7. HANDLING AND STORAGE

Precautions for safe handling

- Advice on Safe Handling** Wash thoroughly after handling. Use personal protection recommended in Section 8. Avoid contact with skin, eyes or clothing. Avoid breathing mists.

Conditions for safe storage, including any incompatibilities

- Storage Conditions** Keep containers tightly closed in a dry, cool and well-ventilated place. Store at 32°F - 105°F. Protect from direct sunlight. Store away from incompatible materials. Keep out of the reach of children.
- Incompatible Materials** Strong alkalis.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Citric Acid 77-92-9	-	15 mg / m ³ (Total)	-
Manganese Sulfate Monohydrate 10034-96-5	TWA: 0.2 mg/m ³ Mn	(vacated) Ceiling: 5 mg/m ³ Ceiling: 5 mg/m ³ Mn	IDLH: 500 mg/m ³ Mn TWA: 1 mg/m ³ Mn STEL: 3 mg/m ³ Mn
Copper sulfate 7758-98-7	TWA: 1 mg/m ³ Cu dust and mist	-	IDLH: 100 mg/m ³ Cu dust and mist TWA: 1 mg/m ³ Cu dust and mist
Ferrous Sulfate 7782-63-0	TWA: 1 mg/m ³ Fe	(vacated) TWA: 1 mg/m ³ Fe	TWA: 1 mg/m ³ Fe

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	Safety goggles.
Skin and Body Protection	Wear rubber or neoprene gloves. Coveralls, apron or other equipment should be worn to minimize skin contact.
Respiratory Protection	Ensure adequate ventilation, especially in confined areas.
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**

Physical State	Liquid	Odor	Citrus
Appearance	Dark brown liquid	Odor Threshold	Not determined
Color	Dark brown		
Property	Values	Remarks • Method	
pH	2.74		
Melting Point/Freezing Point	Not available		
Boiling Point/Boiling Range	100 °C / 212 °F		
Flash Point	Not available		
Evaporation Rate	Not known		
Flammability (Solid, Gas)	n/a-liquid		
Upper Flammability Limits	Not available		
Lower Flammability Limit	Not available		
Vapor Pressure	Not known		
Vapor Density	Not known		
Specific Gravity	Not determined		
Water Solubility	Approx. 98%		
Solubility in other solvents	Not determined		
Partition Coefficient	Not determined		
Auto-ignition Temperature	Not available		
Decomposition Temperature	Not determined		
Kinematic Viscosity	Not determined		
Dynamic Viscosity	Not determined		
Explosive Properties	Not determined		
Oxidizing Properties	Not determined		
Density	9.679 wt/gal		

10. STABILITY AND REACTIVITY**Reactivity**

Not reactive under normal conditions.

Chemical Stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

Mildly corrosive to common metals.

Conditions to Avoid

Keep out of reach of children.

Incompatible Materials

Strong alkalis.

Hazardous Decomposition Products

Sulfur oxides. Zinc oxide.

11. TOXICOLOGICAL INFORMATION**Information on likely routes of exposure****Product Information**

Eye Contact	Causes serious eye irritation.
Skin Contact	Avoid contact with skin.
Inhalation	Avoid breathing vapors or mists.
Ingestion	Do not taste or swallow.

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Citric Acid 77-92-9	= 3000 mg/kg (Rat)	-	-
Zinc sulfate 7733-02-0	= 500 mg/kg (Rat)	-	-
Copper sulfate 7758-98-7	= 300 mg/kg (Rat)	= 1000 mg/kg (Rabbit)	-

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 This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.

Numerical measures of toxicity

Not determined

Unknown Acute Toxicity 0.995% of the mixture consists of ingredient(s) of unknown toxicity.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Very toxic to aquatic life with long lasting effects.

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Citric Acid 77-92-9		1516: 96 h <i>Lepomis macrochirus</i> mg/L LC50 static		120: 72 h <i>Daphnia magna</i> mg/L EC50
Zinc sulfate 7733-02-0	64.8: 72 h <i>Chlorella vulgaris</i> mg/L EC50 2.4: 96 h <i>Chlorella vulgaris</i> mg/L EC50 0.056: 72 h <i>Pseudokirchneriella subcapitata</i> mg/L EC50 static	0.162: 96 h <i>Oncorhynchus mykiss</i> mg/L LC50 flow-through 0.03 - 0.05: 96 h <i>Oncorhynchus mykiss</i> mg/L LC50 semi-static 0.34 - 0.93: 96 h <i>Oncorhynchus mykiss</i> mg/L LC50 static 0.218 - 0.42: 96 h <i>Pimephales promelas</i> mg/L LC50 flow-through 0.06: 96 h <i>Pimephales promelas</i> mg/L LC50 static 0.23 - 0.48: 96 h <i>Pimephales promelas</i> mg/L LC50 0.168 - 0.25: 96 h <i>Pimephales promelas</i> mg/L LC50 semi-static 0.15: 96 h <i>Cyprinus carpio</i> mg/L LC50 semi-static 16.85 - 27.18: 96 h <i>Cyprinus carpio</i> mg/L LC50 static 3 - 4.6: 96 h <i>Lepomis macrochirus</i> mg/L LC50 flow-through 3.55 - 6.32: 96 h <i>Lepomis macrochirus</i> mg/L LC50 static 0.63: 96 h <i>Poecilia reticulata</i> mg/L LC50 49.23 - 64.16: 96 h <i>Poecilia reticulata</i> mg/L LC50 semi-static 0.48 - 1.72: 96 h <i>Poecilia reticulata</i> mg/L LC50 static	EC50 = 3.45 mg/L 15 min EC50 = 40.5 mg/L 30 min EC50 = 476 mg/L 5 min EC50 > 700 mg/L 16 h	0.75: 48 h <i>Daphnia magna</i> mg/L EC50 0.538 - 0.908: 48 h <i>Daphnia magna</i> mg/L EC50 Static
Copper sulfate 7758-98-7		0.1: 96 h <i>Oncorhynchus mykiss</i> mg/L LC50		0.0058 - 0.0073: 48 h <i>Daphnia magna</i> mg/L EC50 Static

Persistence/Degradability

Not determined.

Bioaccumulation

Not determined.

Mobility

Chemical Name	Partition Coefficient
Citric Acid 77-92-9	-1.72

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

Chemical Name	California Hazardous Waste Status
Zinc sulfate 7733-02-0	Toxic
Copper sulfate 7758-98-7	Toxic

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 cupric sulfate which is listed as a DOT Marine Pollutant (49 CFR 172.101, Appendix B)

15. REGULATORY INFORMATION

International Inventories

Not determined

US Federal Regulations

CERCLA

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Zinc sulfate 7733-02-0	1000 lb		RQ 1000 lb final RQ RQ 454 kg final RQ
Ferrous Sulfate 7782-63-0	1000 lb		RQ 1000 lb final RQ RQ 454 kg final RQ
Copper sulfate 7758-98-7	10 lb		RQ 10 lb final RQ RQ 4.54 kg final RQ

SARA 313

Chemical Name	CAS No	Weight-%	SARA 313 - Threshold Values %
Zinc sulfate - 7733-02-0	7733-02-0	1.4	1.0
Manganese Sulfate Monohydrate - 10034-96-5	10034-96-5	1.2	1.0
Copper sulfate - 7758-98-7	7758-98-7	<1	1.0

CWA (Clean Water Act)

Component	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Zinc sulfate 7733-02-0 (1.4)	1000 lb	X		X
Ferrous Sulfate 7782-63-0 (<1)				X
Copper sulfate 7758-98-7 (<1)	10 lb	X		X

US State Regulations**California Proposition 65**

This product contains the following Proposition 65 chemicals.

Chemical Name	California Proposition 65
Zinc sulfate - 7733-02-0	X

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Zinc sulfate 7733-02-0	X	X	X
Manganese Sulfate Monohydrate 10034-96-5	X		X
Copper sulfate 7758-98-7	X	X	X
Ferrous Sulfate 7782-63-0		X	X

16. OTHER INFORMATION**NFPA****Health Hazards**

Not determined

Flammability

Not determined

Instability

Not determined

Special Hazards

Not determined

HMIS**Health Hazards**

Not determined

Flammability

Not determined

Physical Hazards

Not determined

Personal Protection

Not determined

Issue Date:

17-Nov-2000

Revision Date:

1-Apr-2016

Revision Note:

Address Change

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