

# Safety Data Sheet

Issue Date: 22-Jul-2008

Revision Date: 04-Apr-2016

Version 3

## 1. IDENTIFICATION

### Product Identifier

**Product Name** Micro Sea 7-0-1

### Other means of identification

**SDS #** VLS-150  
FFN: 00706

### Recommended use of the chemical and restrictions on use

**Recommended Use** Fertilizer.

### Details of the supplier of the safety data sheet

#### **Supplier Address**

Planet Turf  
10315 E. Holman Avenue  
Spokane, WA 99206

### Emergency Telephone Number

**Company Phone Number** Business Phone: (509) 921-5421

**Emergency Telephone (24 hr)** INFOTRAC 1-800-535-5053

## 2. HAZARDS IDENTIFICATION

**Appearance** Brown liquid

**Physical State** Liquid

**Odor** Sweet

### Classification

Reproductive toxicity

Category 1B

### Hazards Not Otherwise Classified (HNOC)

Causes mild skin irritation

### Signal Word

**Danger**

### Hazard Statements

May damage fertility or the unborn child



### Precautionary Statements - Prevention

Obtain special instructions before use  
Do not handle until all safety precautions have been read and understood  
Use personal protective equipment as required

**Precautionary Statements - Response**

If exposed or concerned: Get medical advice/attention

**Precautionary Statements - Storage**

Store locked up

**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**

Please also refer to subsequent sections of this SDS for additional information regarding the components of this product.

Chemical Name	CAS No	Weight-%
Citric Acid	77-92-9	Proprietary
Copper sulfate pentahydrate	7758-99-8	Proprietary
Ferrous Sulfate	7782-63-0	Proprietary
Zinc sulfate	7733-02-0	Proprietary
Boric Acid	10043-35-3	Proprietary

\*\*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**

<b>Eye Contact</b>	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If eye irritation persists: Get medical advice/attention.
<b>Skin Contact</b>	Wash off immediately with plenty of water. If irritation develops or persists seek medical attention.
<b>Inhalation</b>	Remove exposed individual(s) to fresh air for 20 minutes. Consult a physician / poison center if individual's condition declines or if symptoms persist.
<b>Ingestion</b>	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**

<b>Symptoms</b>	Causes mild skin irritation. 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. Symptoms of over inhalation: may cause respiratory tract irritation, nausea, vomiting, weakness, fever, chills and loss of appetite. Chronic exposure may cause pneumonia, liver damage and neurologic damage. Medical conditions aggravated by exposure: hemochromatosis.
-----------------	--

**Indication of any immediate medical attention and special treatment needed**

<b>Notes to Physician</b>	Treat symptomatically.
---------------------------	------------------------

## 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** Wear protective clothing as described in Section 8 of this safety data sheet.

**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. Soak up and contain spill with an inert (i.e. vermiculite, dry sand or earth) absorbent material.

**Methods for Clean-Up** Sweep up absorbed material and shovel into suitable containers for disposal. For waste disposal, see section 13 of the SDS.

## 7. HANDLING AND STORAGE

### Precautions for safe handling

**Advice on Safe Handling** Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Wash thoroughly after handling. 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. Protect from direct sunlight. Store away from incompatible materials. Keep out of the reach of children. Store above freezing point and below 105°F (40.5°C).

**Incompatible Materials** Strong alkaline materials such as caustic potash (potassium hydroxide) and caustic soda (sodium hydroxide). Mildly corrosive to common metals.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Exposure Guidelines**

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Citric Acid 77-92-9	-	15 mg / m <sup>3</sup> (Total)	-
Copper sulfate pentahydrate 7758-99-8	TWA: 1 mg/m <sup>3</sup> Cu dust and mist	TWA: 1 mg/m <sup>3</sup> Cu dust and mist	IDLH: 100 mg/m <sup>3</sup> Cu dust and mist TWA: 1 mg/m <sup>3</sup> Cu dust and mist
Ferrous Sulfate 7782-63-0	TWA: 1 mg/m <sup>3</sup> Fe	(vacated) TWA: 1 mg/m <sup>3</sup> Fe	TWA: 1 mg/m <sup>3</sup> Fe
Manganese Sulfate Monohydrate 10034-96-5	TWA: 0.02 mg/m <sup>3</sup> Mn TWA: 0.1 mg/m <sup>3</sup> Mn	(vacated) Ceiling: 5 mg/m <sup>3</sup> Ceiling: 5 mg/m <sup>3</sup> Mn	IDLH: 500 mg/m <sup>3</sup> Mn TWA: 1 mg/m <sup>3</sup> Mn STEL: 3 mg/m <sup>3</sup> Mn
Boric Acid 10043-35-3	STEL: 6 mg/m <sup>3</sup> inhalable fraction TWA: 2 mg/m <sup>3</sup> inhalable fraction	-	-
Ethanolamine 141-43-5	STEL: 6 ppm TWA: 3 ppm	TWA: 3 ppm TWA: 6 mg/m <sup>3</sup> (vacated) TWA: 3 ppm (vacated) TWA: 8 mg/m <sup>3</sup> (vacated) STEL: 6 ppm (vacated) STEL: 15 mg/m <sup>3</sup>	IDLH: 30 ppm TWA: 3 ppm TWA: 8 mg/m <sup>3</sup> STEL: 6 ppm STEL: 15 mg/m <sup>3</sup>

**Appropriate engineering controls**

**Engineering Controls**

Apply technical measures to comply with the occupational exposure limits. Use general or local exhaust ventilation to meet TLV requirements. Ensure that eyewash stations and safety showers are close to the workstation location.

**Individual protection measures, such as personal protective equipment**

**Eye/Face Protection**

Safety goggles. Refer to 29 CFR 1910.133 for eye and face protection regulations.

**Skin and Body Protection**

Coveralls, apron or other equipment should be worn to minimize skin contact. Refer to 29 CFR 1910.138 for appropriate skin and body protection.

**Respiratory Protection**

If exposure levels are exceeded, use a NIOSH/OSHA approved self-contained breathing apparatus. Refer to 29 CFR 1910.134 for respiratory protection requirements.

**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**

<b>Physical State</b>	Liquid	<b>Odor</b>	Sweet
<b>Appearance</b>	Brown liquid	<b>Odor Threshold</b>	Not determined
<b>Color</b>	Brown		

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
<b>pH</b>	Not determined	
<b>Melting Point/Freezing Point</b>	N/A	
<b>Boiling Point/Boiling Range</b>	100 °C / 212 °F	
<b>Flash Point</b>	Not available	
<b>Evaporation Rate</b>	Not known	
<b>Flammability (Solid, Gas)</b>	n/a-liquid	

<b>Upper Flammability Limits</b>	Not available	
<b>Lower Flammability Limit</b>	Not available	
<b>Vapor Pressure</b>	Not known	
<b>Vapor Density</b>	Not known	
<b>Specific Gravity</b>	1.19	(1=Water)
<b>Water Solubility</b>	Approx. 98%	
<b>Solubility in other solvents</b>	Not determined	
<b>Partition Coefficient</b>	Not determined	
<b>Auto-ignition Temperature</b>	Not available	
<b>Decomposition Temperature</b>	Not determined	
<b>Kinematic Viscosity</b>	Not determined	
<b>Dynamic Viscosity</b>	Not determined	
<b>Explosive Properties</b>	Not determined	
<b>Oxidizing Properties</b>	Not determined	

## 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 alkaline materials such as caustic potash (potassium hydroxide) and caustic soda (sodium hydroxide). Mildly corrosive to common metals.

### Hazardous Decomposition Products

Sulfur oxides. Zinc oxide.

## 11. TOXICOLOGICAL INFORMATION

### Information on likely routes of exposure

#### Product Information

<b>Eye Contact</b>	May be irritating to the eye.
<b>Skin Contact</b>	Causes mild skin irritation.
<b>Inhalation</b>	Avoid breathing vapors or mists.
<b>Ingestion</b>	Do not taste or swallow. May cause irritation of gastrointestinal tract.

### Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Glycine 56-40-6	= 7930 mg/kg ( Rat )	-	-
Citric Acid 77-92-9	= 3000 mg/kg ( Rat )	-	-
Copper sulfate pentahydrate 7758-99-8	= 472 mg/kg ( Rat )	> 2 g/kg ( Rat )	> 2.95 mg/L (Rat)
Zinc sulfate	= 500 mg/kg ( Rat )	-	-

7733-02-0			
Boric Acid 10043-35-3	= 2660 mg/kg ( Rat )	> 2000 mg/kg ( Rabbit )	> 0.16 mg/L ( Rat ) 4 h
Ethanolamine 141-43-5	= 1720 mg/kg ( Rat )	= 1 mL/kg ( Rabbit ) = 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** Based on the information provided, this product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.

**Reproductive toxicity** May damage fertility or the unborn child.

**Numerical measures of toxicity**

Not determined

**12. ECOLOGICAL INFORMATION****Ecotoxicity**

Very toxic to aquatic life with long lasting effects.

**Component Information**

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
Copper sulfate pentahydrate 7758-99-8		0.66 - 1.15: 96 h <i>Lepomis macrochirus</i> mg/L LC50 semi-static 0.96 - 1.8: 96 h <i>Lepomis macrochirus</i> mg/L LC50 static 0.1478 - 0.165: 96 h <i>Oncorhynchus mykiss</i> mg/L LC50 flow-through 0.09 - 0.19: 96 h <i>Oncorhynchus mykiss</i> mg/L LC50 static 0.6752: 96 h <i>Pimephales promelas</i> mg/L LC50 static		0.147 - 0.227: 48 h <i>Daphnia magna</i> mg/L EC50 Static
Zinc sulfate 7733-02-0	0.056: 72 h <i>Pseudokirchneriella subcapitata</i> mg/L EC50 static 64.8: 72 h <i>Chlorella vulgaris</i> mg/L EC50 2.4: 96 h <i>Chlorella vulgaris</i> mg/L EC50	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 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 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	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

		semi-static 16.85 - 27.18: 96 h Cyprinus carpio mg/L LC50 static 3 - 4.6: 96 h Lepomis macrochirus mg/L LC50 flow-through		
Boric Acid 10043-35-3		1020: 72 h Carassius auratus mg/L LC50 flow-through		115 - 153: 48 h Daphnia magna mg/L EC50
Ethanolamine 141-43-5	15: 72 h Desmodesmus subspicatus mg/L EC50	200: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 114 - 196: 96 h Oncorhynchus mykiss mg/L LC50 static 3684: 96 h Brachydanio rerio mg/L LC50 static 300 - 1000: 96 h Lepomis macrochirus mg/L LC50 static 227: 96 h Pimephales promelas mg/L LC50 flow-through	EC50 = 110 mg/L 17 h EC50 = 12200 mg/L 2 h EC50 = 13.7 mg/L 30 min	65: 48 h Daphnia magna mg/L EC50

**Persistence/Degradability**

Not determined.

**Bioaccumulation**

Not determined.

**Mobility**

Chemical Name	Partition Coefficient
Citric Acid 77-92-9	-1.72
Boric Acid 10043-35-3	-0.757
Ethanolamine 141-43-5	-1.91

**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** This product contains one or more substances that are listed with the State of California as a hazardous waste

Chemical Name	California Hazardous Waste Status
Copper sulfate pentahydrate 7758-99-8	Toxic
Zinc sulfate 7733-02-0	Toxic
Boric Acid 10043-35-3	Toxic

### 14. TRANSPORT INFORMATION

<b>Note</b>	Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances.
<b>DOT</b>	Not regulated
<b>IATA</b>	Not regulated
<b>IMDG</b> <b>Marine Pollutant</b>	This product contains cupric sulfate which is listed as a DOT Marine Pollutant (49 CFR 172.101, Appendix B)

### 15. REGULATORY INFORMATION

#### International Inventories

Chemical Name	TSCA	DSL	NDSL	EINECS	ELINCS	ENCS	IECSC	KECL	PICCS	AICS
Citric Acid	Present	X		Present		Present	X	Present	X	X
Copper sulfate pentahydrate							X		X	X
Ferrous Sulfate						Present	X		X	X
Zinc sulfate	Present	X		Present		Present	X	Present	X	X
Boric Acid	Present	X		Present		Present	X	Present	X	X

#### **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

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Copper sulfate pentahydrate 7758-99-8	10 lbs	10 lbs	10 lbs
Ferrous Sulfate 7782-63-0	1000 lb		RQ 1000 lb final RQ RQ 454 kg final RQ
Zinc sulfate 7733-02-0	1000 lb		RQ 1000 lb final RQ RQ 454 kg final RQ

#### 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

Chemical Name	CAS No	Weight-%	SARA 313 - Threshold Values %
Copper sulfate pentahydrate - 7758-99-8	7758-99-8	1.049	1.0



**CWA (Clean Water Act)**

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Copper sulfate pentahydrate		X		
Zinc sulfate	1000 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
Copper sulfate pentahydrate 7758-99-8	X		X
Ferrous Sulfate 7782-63-0		X	X
Zinc sulfate 7733-02-0	X	X	X
Manganese Sulfate Monohydrate 10034-96-5	X		X
Ethanolamine 141-43-5	X	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:

22-Jul-2008

Revision Date:

04-Apr-2016

Revision Note:

Section 1

**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**