

1. IDENTIFICATION

Product identifier Minor Element Soluble
Other means of identification None
Synonym(s) None
Recommended use Water Soluble Fertilizer
Recommended restrictions None known.
Company Southern Agricultural Insecticides, Inc.
P.O. Box 218
Palmetto, FL 34220
Company Telephone/Fax: (941) 722-3285/(941) 723-2974
Emergency Telephone Number: (800) 424-9300 (CHEMTREC)

2. HAZARD(S) IDENTIFICATION

OSHA Regulatory Status: This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Oral	Category 4
Skin Corrosion or Irritation	Category 2
Serious Eye Damage or Eye Irritation	Category 1
Reproductive Toxicity	Category 1 B
Specific Target Organ Toxicity (Repeated Exposure)	Category 2

Label Elements:

Signal word Danger

Pictograms:**Hazard Statements:**

Harmful if swallowed
Causes skin irritation
Causes serious eye damage
May damage fertility or the unborn child
May cause damage to organs through prolonged or repeated exposure

Appearance: Prills, powder **Physical State:** Solid **Odor:** Fertilizer

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

Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Do not breathe dust/fume/gas/mist/vapors/spray

Precautionary Statements - Response

IF exposed or concerned: Get medical advice/attention

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: Wash with plenty of soap and water If skin irritation occurs: Get medical advice/attention
Take off contaminated clothing and wash before reuse

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth

Precautionary Statements - Storage

Store locked up

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards Not Otherwise Classified (HNOC):

Other Information:

- Very toxic to aquatic life with long lasting effects
- Very toxic to aquatic life

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	CAS-No	Weight %
Ferrous Sulphate Heptahydrate	7782-63-0	37.5
Manganese sulphate	7785-87-7	22.4
Zinc sulphate monohydrate	7446-19-7	12.5
Copper sulfate pentahydrate	7758-99-8	12.6
Disodium octaborate tetrahydrate	12280-03-4	7.15
Disodium molybdate dihydrate	10102-40-6	0.12

* The exact percentage (concentration) of composition has been withheld as a trade secret

4. FIRST AID MEASURES

First Aid Measures:

Eye Contact: If in eyes, hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing. Call a poison control center or doctor for treatment advice.

Skin Contact: If on skin or clothing, take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

Inhalation: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.

Ingestion: Call a physician or Poison Control Centre immediately. Have person sip a glass of water if able to swallow. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person.

Indication of Any Immediate Medical Attention and Special Treatment Needed:

Notes to Physician: Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media: Water spray, carbon dioxide, dry chemical, chemical foam.

Specific hazards: Dust at sufficient concentrations may form explosive mixtures with air.

Hazardous Combustion Products: Thermal decomposition can lead to release of irritating gases and vapors.

Explosion Data: No information available.

Sensitivity to Mechanical Impact: No information available.

Sensitivity to Static Discharge:
No information available.

Special Protective Equipment for Firefighters: In the event of fire, wear self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures:

Personal Precautions: Avoid contact with skin, eyes and clothing.

Environmental Precautions: Prevent product from entering drains.

Methods and Material for Containment and Cleanup:

Methods for containment: Vacuum or sweep up material and place in a disposal container.

Methods for Cleanup: If material is uncontaminated, collect and reuse as recommended for product. If material is contaminated, put in appropriate container and dispose. Flush with water.

7. HANDLING AND STORAGE

Precautions for Safe Handling:

Handling: Avoid container breakage. Avoid inhalation or contact with skin, eyes, or clothing. Do not contaminate water sources when disposing of equipment wash waters. Keep out of lakes, streams or ponds.

Conditions for Safe Storage, Including any Incompatibilities:

Storage: Keep containers tightly closed in a dry, cool and well-ventilated place. Do not contaminate water, food, or feed by storage or disposal.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters:

Exposure Guidelines

Ingredients	CAS-No	ACGIH:	OSHA:	IDLH:
Ferrous Sulfate Heptahydrate	7782-63-0	1 mg/m ³ TWA	Not Listed	Not Listed
Manganese sulphate;	7785-87-7	0.1 mg/m ³ TWA	Not Listed	500 mg/m ³ IDLH Mn
Zinc sulphate monohydrate;	7446-19-7	Not Listed	Not Listed	Not Listed
Copper sulfate pentahydrate	7758-99-8	1 mg/m ³ TWA	Not Listed	100 mg/m ³ IDLH Cu
Disodium octaborate tetrahydrate	12280-03-4	2 mg/m ³ TWA	Not Listed	Not Listed
Disodium molybdate dihydrate	10102-40-6	Not known	Not known	Not known

Appropriate Engineering Controls:

Engineering Measures to Reduce Exposure: Use adequate ventilation to keep the airborne concentrations of this material below the recommended exposure standard.

Individual Protection Measures, Such as Personal Protective Equipment:

Eye/Face Protection: Safety glasses with side shields or goggles. Wear face-shield and protective suit for abnormal processing problems.

Skin and Body Protection: Wear suitable protective clothing. Impervious clothing. Impervious gloves. Wear long-sleeve shirt, pants, shoes with socks, and gloves. After using product, remove clothing and wash before reuse.

Respiratory Protection: If airborne levels are high or product does not remain intact, use a combination of engineering controls (e.g. ventilation) and personal protection, e.g., NIOSH/MSHA approved respirator for dusts, mists, and fumes.

General hygiene considerations: Wash hands before breaks and immediately after handling the **con-**product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical and Chemical Properties:

Physical State:	Solid	Appearance:	Prills, powder
Color:	white	Odor:	No information available
Odor:	Fertilizer	Threshold:	

Property

pH:	No information available
Melting Point/Freezing Point:	No information available
Boiling Point/Range:	No information available
Flash Point:	Does not flash
Evaporation Rate:	No information available
Flammability (solid, gas):	No information available
Flammability Limits in Air:	
Upper Flammability Limit:	No information available
Lower Flammability Limit:	No information available
Vapor Pressure:	No information available
Vapor Density:	No information available
Specific Gravity:	No information available
Solubility:	approx. 95 grams/100 ml

Solubility in other Solvents: No information available
Partition Coefficient: No information available
Autoignition Temperature: No information available
Decomposition Temperature: No information available
Kinematic Viscosity: No information available
Dynamic Viscosity: No information available
Explosive Properties: No information available
Oxidizing Properties: Not considered an oxidizer

Other Information:

Softening Point: No information available
Molecular Weight: No information available
VOC Content (): No information available
Density: No information available
Bulk density: 60-70 lbs./cu.ft.

10. STABILITY AND REACTIVITY

Reactivity: Stable under normal conditions
Chemically Stable: yes.
Conditions to Avoid: Extreme heat. Strong oxidizing agents. Contact with strong alkalis, oxidizers, and reducing agents. Contact with fuels and other organic or combustible materials. Active metals such as aluminum, magnesium, and chlorine compounds.
Materials to avoid: Strong acids, bases, oxidizers, and reducing agents. Avoid contact with other chemicals. Fuels. Heavy metal salts.
Hazardous Decomposition Products: Combustion may produce irritating gases and vapors. Toxic metal oxides may be produced.
Possibility of Hazardous Reactions: Poses little or no immediate hazard.

11. TOXICOLOGICAL INFORMATION

Information on the Likely Routes of Exposure (inhalation, ingestion, skin and eye contact):

Eye effects: Causes serious eye damage
Skin effects: Causes skin irritation
Ingestion: Harmful if swallowed.
Inhalation: May cause irritation of respiratory tract.

Component Information:

Ingredients	LD50 Oral	LD50 Dermal	LC50 Inhalation
Manganese sulphate; 7785-87-7	= 782 mg/kg (Rat)	-	-
Copper sulphate pentahydrate; 7758-99-8	= 960 mg/kg (Rat)	-	-
Disodium octaborate tetrahydrate 12280-03-4	= 2660 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	>0.16mg/L (Rat)4h

Information on Toxicological Effects:

Delayed and Immediate Effects as well as Chronic Effects from Short and Long-Term Exposure:

Sensitization: No information available
Mutagenic effects No information available
Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen

Ingredients	ACGIH - Carcinogens	IARC:	NTP Report on Carcinogens List	OSHA
Disodium octaborate tetrahydrate	A4	-	-	-

Reproductive Toxicity May damage fertility or the unborn child
STOT - Single Exposure No information available
STOT - Repeated Exposure May cause damage to organs through prolonged or repeated exposure.
Aspiration Hazard No information available.

Numerical Measures of Toxicity - Product Information:

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

ATEmix (oral): 647 mg/kg
ATEmix (dermal): 10695 mg/kg
LD50/oral: No information available
LD50/dermal: No information available
LC50/inhalation: No information available

12. ECOLOGICAL INFORMATION

Marine Pollutant: This product contains a chemical which is listed as a severe marine pollutant according to DOT.

Ecotoxicity:

Unknown Aquatic Toxicity: 38.5 of the mixture consists of component(s) of unknown hazards to the aquatic environment

Ecotoxicity effects: Harmful to aquatic organisms with long lasting effects. Harmful to aquatic life.

Persistence and degradability: Degrades slowly.

Bioaccumulation: Carbon dioxide (CO₂).

Ingredients

Disodium octaborate tetrahydrate

LOGPOW

-0.757

Mobility: Water contaminating.

Additional ecological information: This product contains boron and should be used according to directions only, especially on crops sensitive to boron uptake. Contains Molybdenum (Mo). The application of materials containing Molybdenum (Mo) may result in forage crops containing levels of Molybdenum (Mo) which are toxic to ruminant animals. Do not contaminate water sources when disposing of equipment washwaters.

13. DISPOSAL CONSIDERATIONS

Waste Treatment Methods:

Disposal of Wastes: If empty, do not reuse container. Do not place product down any indoor or outdoor drain. Contaminated product should be disposed of in an approved landfill disposal facility in accordance with applicable Federal/ Provincial, and/or local regulations.

Contaminated Packaging: Do not reuse container.

14. TRANSPORT INFORMATION

The description shown may not apply to all situations. Consult 49 CFR, or appropriate dangerous goods regulations for additional description requirements (e.g. technical name) and mode-specific or quantity-specific shipping requirements.

DOT (Land)	For domestic shipments marine pollutant container mark and shipping paper entry only apply to bulk and vessel transport
DOT (Vessel)	UN3077, Environmentally Hazardous Substance, solid, n.o.s., (copper sulfate), 9, PGIII, Marine Pollutant
IATA (Air)	UN3077, Environmentally Hazardous Substance, solid, n.o.s., (copper sulfate), 9, PGIII
IMO/IMDG (Vessel)	UN3077, Environmentally Hazardous Substance, solid, n.o.s., (copper sulfate), 9, PGIII, Marine Pollutant

15. REGULATORY INFORMATION

Federal Regulations:

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

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

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)

Iron sulfate 7782-63-0	Clean Water Act - Hazardous Substances
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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). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

State Regulations (RTK):
California Proposition 65:
U.S. State Right-to-Know Regulations:
U.S. EPA Label information:
EPA Pesticide Registration Number: not applicable

16. OTHER INFORMATION

NFPA:	Health: 3	Flammability: 0	Reactivity: 1
HMIS:	Health: 3	Flammability: 0	Reactivity: 1

Disclaimer

This information contained herein is, to the best of Southern Agricultural Insecticides, Inc. knowledge and belief, accurate and reliable as of the date of preparation of this document. However, no warranty or guarantee, express or implied, is made as to the accuracy or reliability, and Southern Agricultural Insecticides, Inc. shall not be liable for any loss or damage arising out of the use thereof. No authorization is given or implied to use any patented invention without a license. In addition, Southern Agricultural Insecticides, Inc. shall not be liable for any damage or injury resulting from abnormal use, from any failure to adhere to recommended practices or from any hazards inherent in the nature of the product.

End of Safety Data Sheet