Safety Data Sheet

Issue Date: 04-Apr-2013 **Revision Date:** 17-May-2016 **Version** 2

1. IDENTIFICATION

Product Identifier

Product Name Multi-Com Granular Manganese 8%

Other means of identification

SDS # VLS-010R

Other Information Factory Formula: 00670.

Recommended use of the chemical and restrictions on use

Recommended Use Plant Nutrients.

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 colored pellets **Physical state** Solid Dry material **Odor** No odor

Classification

Carcinogenicity	Category 1A
Specific target organ toxicity (repeated exposure)	Category 2

Hazards Not Otherwise Classified (HNOC)

May be harmful if swallowed

Signal Word

Danger

Hazard statements

May cause cancer
May cause damage to organs through prolonged or repeated exposure

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
Do not breathe dust/fume/gas/mist/vapors/spray

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
Toxic to aquatic life with long lasting effects

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%
Manganese Sulfate Monohydrate	10034-96-5	20-30
Proprietary Ingredient	Proprietary	Proprietary
Silica, Quartz	14808-60-7	1-5
Citric Acid	77-92-9	1-5
Ammonium Sulfate	7783-20-2	1-5

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 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician immediately.

Skin Contact IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash it before reuse. If skin irritation occurs: Get medical advice/attention.

Inhalation Remove to fresh air. If breathing becomes difficult, call a physician.

Ingestion Drink large volumes of milk or water. Call a physician or poison control center immediately. Induce vomiting only if advised by medical personnel.

Most important symptoms and effects

Symptoms Direct contact with eyes may cause irritation. Inhalation may aggravate respiratory problems. 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.

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.

Unsuitable Extinguishing Media Not determined.

Specific Hazards Arising from the Chemical
None.

Hazardous Combustion Products May release toxic oxides of Zinc and Sulfur in a fire.

Explosion Data
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

Environmental precautions See Section 13: DISPOSAL CONSIDERATIONS. 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 Neutralize with suitable material, such as slaked lime or sodium bicarbonate. Neutralized residues may be permitted to be flushed with water to sanitary sewer. Check with local authorities before flushing to sewer. Follow all Federal, State and Local regulations.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on Safe Handling Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Use personal protection recommended in Section 8. Wash face, hands, and any exposed skin thoroughly after handling. Do not breathe dust. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep container tightly closed and store in a cool, dry and well-ventilated place. Store at 32°F - 105°F. Protect from direct sunlight. Keep out of the reach of children. Store locked up.

Incompatible Materials Strong alkalis.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Manganese Sulfate Monohydrate 10034-96-5	TWA: 0.02 mg/m^3 Mn respirable fraction TWA: 0.1 mg/m^3 Mn inhalable fraction	(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
Proprietary Ingredient	TWA: 1 mg/m^3 respirable fraction	-	-
Silica, Quartz 14808-60-7	TWA: 0.025 mg/m^3 respirable fraction	(vacated) TWA: 0.1 mg/m^3 respirable dust : (30)/(%SiO2 + 2) mg/m^3 TWA total dust : (250)/(%SiO2 + 5) mppcf TWA respirable fraction : (10)/(%SiO2 + 2) mg/m^3 TWA respirable fraction	IDLH: 50 mg/m^3 respirable dust TWA: 0.05 mg/m^3 respirable dust
Citric Acid 77-92-9	-	15 mg / m3 (Total)	-

Appropriate engineering controls

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

Individual protection measures, such as personal protective equipment

Eye/Face Protection Safety goggles.

Skin and Body Protection Wear neoprene or other acid resistant gloves. Chemically resistant apron, boots, and gloves or rubber rain suit is recommended.

Respiratory Protection Ensure adequate ventilation, especially in confined areas. In case of inadequate ventilation wear respiratory protection.

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 Solid Dry material
Appearance Dark colored pellets
Color Dark colored
Odor No odor
Odor Threshold Not determined

Property	Values	Remarks • Method
pH	Not applicable	
Melting Point/Freezing Point	Not applicable	
Boiling Point/Boiling Range	Not applicable	
Flash Point	Not applicable	
Evaporation Rate	Not applicable	

Flammability (Solid, Gas)	Not determined
Flammability Limits in Air	
Upper Flammability Limits	Not determined
Lower Flammability Limit	Not determined
Vapor Pressure	Not known
Vapor Density	Not known
Relative Density	Not determined
Water Solubility	~98%
Solubility in other solvents	Not determined
Partition Coefficient	Not determined
Auto-ignition Temperature	Not determined
Decomposition Temperature	Not determined
Kinematic Viscosity	Not determined
Dynamic Viscosity	Not determined
Explosive Properties	Not determined
Oxidizing Properties	Not determined

Other Information

Bulk Density 47 lb/cu. ft.

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 No information available.

Conditions to Avoid
Keep out of reach of children.

Incompatible Materials
Strong alkalis.

Hazardous Decomposition Products
May release toxic oxides of Zinc and Sulfur in a fire.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Eye Contact Avoid contact with eyes.

Skin Contact Avoid contact with skin.

Inhalation Avoid inhalation of dust.

Ingestion May be harmful if swallowed.

Component Information

Chemical Name	ATEmix (oral)	ATEmix (dermal)	Inhalation LC50
Proprietary Ingredient	> 5000 mg/kg (Rat)	-	-
Sodium Lignosulfonate 8061-51-6	> 40 g/kg (Rat)	-	-
Silica, Quartz 14808-60-7	= 500 mg/kg (Rat)	-	-
Citric Acid 77-92-9	= 3 g/kg (Rat) = 3000 mg/kg (Rat)	-	-
Ammonium Sulfate 7783-20-2	= 2840 mg/kg (Rat)	-	-

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 May cause cancer.

Chemical Name	ACGIH	IARC	NTP	OSHA
Silica, Quartz 14808-60-7	A2	Group 1	Known	X

Legend

ACGIH (American Conference of Governmental Industrial Hygienists)
A2 - Suspected Human Carcinogen
IARC (International Agency for Research on Cancer)
Group 1 - Carcinogenic to Humans
NTP (National Toxicology Program)
Known - Known Carcinogen
OSHA (Occupational Safety and Health Administration of the US Department of Labor)
X - Present

STOT - repeated exposure May cause damage to organs through prolonged or repeated exposure.

Numerical measures of toxicity

Not Determined

12. ECOLOGICAL INFORMATION

Ecotoxicity

Toxic to aquatic life with long lasting effects.

Component Information

Chemical Name	Algae/aquatic plants	Fish	Crustacea
Proprietary Ingredient		19000: 96 h Oncorhynchus mykiss mg/L LC50 static 8.0 - 19.0: 96 h Salmo gairdneri g/L LC50	
Sodium Lignosulfonate 8061-51-6		7300: 48 h Oncorhynchus mykiss mg/L LC50	
Citric Acid 77-92-9		1516: 96 h Lepomis macrochirus mg/L LC50 static	120: 72 h Daphnia magna mg/L EC50
Ammonium Sulfate 7783-20-2		18: 96 h Cyprinus carpio mg/L LC50 123 - 128: 96 h Poecilia reticulata mg/L LC50 semi-static 5.2 - 8.2: 96 h Oncorhynchus mykiss mg/L LC50 static 32.2 - 41.9: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 460 - 1000: 96 h Leuciscus idus mg/L LC50 static	14: 48 h Daphnia magna mg/L LC50 423: 24 h Daphnia magna mg/L EC50

		480: 96 h Brachydanio rerio mg/L LC50 flow-through 250: 96 h Brachydanio rerio mg/L LC50 420: 96 h Brachydanio rerio mg/L LC50 semi-static 126: 96 h Poecilia reticulata mg/L LC50 100: 96 h Pimephales promelas mg/L LC50	

Persistence/Degradability
Not determined.

Bioaccumulation
Not determined.

Mobility

Chemical Name	Partition Coefficient
Citric Acid 77-92-9	-1.72
Ammonium Sulfate 7783-20-2	-5.1

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 Not regulated

IATA Not regulated

IMDG

Marine Pollutant This product contains Ammonium Sulfate, which is classified as a Marine Pollutant in accordance with the IMDG Code

15. REGULATORY INFORMATION

International Inventories

Chemical Name	TSCA	DSL/NDSL	EINECS/ELINCS	ENCS	IECSC	KECL	PICCS	AICS
Lignite Powder (Lenordite)	X	X	X		X	Present		
Manganese Sulfate Monohydrate				Present	X		X	X
Proprietary Ingredient	X	X	X		X	Present	X	X
Sodium Lignosulfonate	X	X		Present	X	Present	X	X
Silica, Quartz	X	X	X	Present	X	Present	X	X

Citric Acid	X	X	X	Present	X	Present	X	X
Ammonium Sulfate	X	X	X	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

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 %
Manganese Sulfate Monohydrate - 10034-96-5	10034-96-5	20-30	1.0
Ammonium Sulfate - 7783-20-2	7783-20-2	2	1.0

US State Regulations

California Proposition 65

This product contains the following Proposition 65 chemicals.

Chemical Name	California Proposition 65
Silica, Quartz - 14808-60-7	Carcinogen

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Manganese Sulfate Monohydrate 10034-96-5	X		X
Silica, Quartz 14808-60-7	X	X	X
Ammonium Sulfate 7783-20-2		X	X

16. OTHER INFORMATION

NFPA	**Health Hazards**	**Flammability**	**Instability**	**Special Hazards**
	Not determined	Not determined	Not determined	Not determined
HMIS	**Health Hazards**	**Flammability**	**Physical hazards**	**Personal Protection**
	Not determined	Not determined	Not determined	Not determined

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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