

SAFETY DATA SHEET

Verdant Green Complete Mn

Date Prepared: 6/1/2026

Replaces: All Previous

SECTION 1. IDENTIFICATION

Product Name: Verdant Green Complete Mn
 Synonyms: None
 Use: Agricultural, Liquid Micronutrient Fertilizer
 Manufacturer: Chemical Dynamics, Inc.
 4206 Business Lane
 Plant City FL 33566
 Phone: 813-752-4950
 Chemtrec (Emergency) Phone: 800-424-9300

SECTION 2. HAZARDS IDENTIFICATION

Pictogram	Signal Word	Hazard Class	Hazard Category	Hazard Statement
	Warning	Skin Irritation Eye Irritation	Cat 2 Cat 2A	Causes skin irritation Causes serious eye irritation.
		STOT: repeat exposure	Cat 2	May cause damage to central nervous system through prolonged or repeat exposure
Precautionary Statements:	Prevention: Do not breathe vapors, mists or sprays. Wash thoroughly after handling. Wear protective gloves, protective clothing, chemical splash proof goggles, and face protection. Use only outdoors or in a well-ventilated area. Keep in original container. Response: Get medical attention/advice if you feel unwell. <u>If on skin:</u> Wash with plenty of water. Take off contaminated clothing and wash before reuse. If skin irritation occurs, get medical attention. <u>If in eyes:</u> Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention. <u>If Inhaled:</u> Remove person to fresh air and keep comfortable for breathing. Call poison control or doctor if you feel unwell. <u>If swallowed:</u> Rinse mouth, Drink large amounts of water. Do NOT induce vomiting. Immediately call doctor or poison center. Absorb spillage to prevent material damage Storage: Store locked up. Keep container tightly closed when not in use. Store in corrosive resistant container (polyethylene, polypropylene, fiberglass, or 316 stainless steel). Disposal: Dispose of contents/containers in accordance with local/regional/national regulations (See Section 13 of SDS).			

SECTION 3. COMPOSITION

Material	CAS #	EINECS #	%WT
Iron Glucoheptonate	25126-38-9	Not assigned	20-22%
Manganese Glucoheptonate	12565-60-5	Not assigned	11-13%
Magnesium Glucoheptonate	68475-44-5	270-642-6	Proprietary blend of materials not classified as hazardous or are below de minimus concentration classification limits
Water	7732-18-5	231-791-2	

See product label for guaranteed analysis.

SECTION 4. FIRST AID MEASURES

Ingestion:	Rinse mouth. Drink large amounts of water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Obtain medical attention.
Skin Contact:	Remove contaminated clothing. Wash with soap and water. Wash contaminated clothing before reuse. If skin irritation occurs: Get medical advice/attention.
Inhalation:	Remove to fresh air and keep at rest in a position comfortable for breathing. Get medical attention for any breathing difficulty.
Eye Contact:	Rinse cautiously with water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
Acute Exposure Symptoms:	Irritation or burning sensation eyes. Prolonged or repeated contact with skin may cause skin irritation. Ingestion of product solution may cause irritation of the gastrointestinal tract to include nausea, vomiting and diarrhea. Large amounts of ferrous salts are toxic, but in adults fatalities are rare. Severe ferrous sulfate poisoning may cause coagulopathy, abdominal pain, severe shock, hematemesis, diarrhea, pallor or cyanosis. This product is astringent to blood vessels. In children, ingesting large quantities may cause vomiting, hematemesis, hepatic damage, tachycardia, peripheral vascular collapse and death.
Chronic Exposure Symptoms:	Manganese may lead to neurotoxicity that resembles Parkinson disease. These patients may have bradykinesia, resting tremor, psychiatric disturbances, and shuffling gait.

SECTION 5. FIRE FIGHTING MEASURES

Extinguishing Media:	Not Flammable. Use extinguishing media appropriate to surrounding fire. Cool containers with water spray from a distance to avoid rupture from thermal expansion.
Specific Hazards:	This product is an aqueous mixture which will not burn. In a fire. This material may decompose and produce sulfur oxides and oxides of carbon, iron, magnesium and manganese.
Protective Equipment and Precautions for Fire-Fighters:	Wear self-contained breathing apparatus (SCBA) and full protective gear. Avoid inhaling combustion products. Fire run-off should be contained to prevent possible environmental damage.
NFPA Rating:	Health: 1, Fire: 0, Reactivity: 0

SECTION 6. ACCIDENTAL RELEASE MEASURES

Precautions:	Corrosive liquid. Isolate area. Keep unnecessary personnel away. Avoid splashing or spraying. Do not touch or walk through spilled material.
Protective Equipment:	Impervious gloves (rubber, neoprene or nitrile), chemical resistant suit, Chemical splash-proof goggles, face shield. Chemical resistant apron and/or rubber boots may be needed. Use NIOSH approved respirator if vapors or mists exceed applicable concentration limits. Clothing and equipment can be washed or laundered for reuse.
Containment:	Stop flow of material if safe to do so. Dike area with diatomaceous earth or sand and maximize recovery. Prevent spillage from entering drains or open bodies of water. Any release to the environment may be subject to reporting requirements.
Clean Up:	Pump into a suitable tank or absorb with diatomaceous earth or sand. Sweep up and place into suitable containers for agronomical land application at recommended rates or dispose of in accordance with local/regional/national regulations (See Section 13 of SDS).

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling:	Open containers carefully. Avoid contact with skin and eyes. Avoid inhalation of vapor or mist. Do not eat, drink or use tobacco products when handling this material. Apply product in open areas. Keep away from children and pets. Do not contaminate feed, seed or any water sources. Launder work clothes frequently and separate from other laundry.
Conditions for safe storage:	Store in a well-ventilated, cool, dry place, away where freezing is possible. Keep away from any sources of heat or flame. Store locked up. Store totes and smaller containers out of direct sunlight at moderate temperatures. Keep containers tightly closed when not in use. Do not let product go below 42°F. Inspect all incoming containers before storage, to ensure containers are properly labeled and not damaged. Store in fiberglass, polypropylene, stainless steel (316L) or HD polyethylene.
Incompatibilities:	This product is not compatible with copper, zinc, or their alloys (i.e. bronze, brass, galvanized metals, etc.). These materials of construction should not be used in piping, handling systems or storage containers for this product.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Component Exposure Limits:	Iron Glucoheptonate	1 mg/m ³	PEL, OSHA (Iron Soluble Salts, as Fe)
		1 mg/m ³	TWA, ACGIH (Iron Soluble Salts, as Fe)
		Not Established	IDLH, NIOSH
		1 mg/m ³	REL, NIOSH (Iron Soluble Salts, as Fe)
		Not Established	STEL, NIOSH
	Manganese Glucoheptonate	5 mg/m ³	PEL, OSHA as Mn
		Not Established	STEL, OSHA
		0.02 mg/m ³	TLV, ACGIH as Mn
		Not Established	IDLH, NIOSH
		Not Established	REL, NIOSH
		Not Established	STEL, NIOSH
Engineering Controls:	Provide local exhaust ventilation and wash facilities. Eye wash stations and safety showers required.		
Personal Protective Equipment:	<u>Eyes</u> : chemical splash-proof goggles and face shield <u>Skin</u> : Impervious gloves (rubber, neoprene or nitrile), long sleeved clothing and chemically resistant apron. <u>Respiratory</u> : None required for ambient air concentrations (i.e. in the open under normal agronomic conditions). Use NIOSH approved respirator when dusts, mists, or vapors are present.		
General:	Good industrial hygiene practices should be followed, such as, washing thoroughly after handling and before eating or drinking.		

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Dark, opaque liquid		
Odor:	None	UEL / LEL:	Not Applicable
Odor Threshold:	Not Available	Vapor Pressure:	Similar to water
pH:	3.5 to 4.5	Density:	1.32 to 1.34 g/cm ³
Melting/Freezing Point:	< 0°C (32°F)	Solubility:	Water
Boiling Point:	>100°C (212°F)	Log_{ow}:	Not Available
Flash Point:	Not Applicable	Auto Ignition Temp:	Not Applicable
Evaporation Rate:	Not Available	Decomposition Temp:	Not Available
Flammability (Solid/Gas):	Not Applicable	Viscosity	Not Available

SECTION 10. STABILITY AND REACTIVITY

Reactivity:	Product is acidic.
Chemical Stability:	Stable under normal conditions
Possibility of Hazardous Reactions:	Hazardous polymerization will not occur.
Conditions to avoid:	Elevated temperatures may cause containers to rupture.
Incompatible Materials:	Strong oxidizing agents, strong acids, strong bases and water reactive substances. Not compatible with copper, zinc, or their alloys (i.e. bronze, brass, galvanized metals, etc.).
Hazardous Decomposition Products:	This material may decompose and produce sulfur oxides and oxides of carbon, iron, magnesium and manganese.

SECTION 11. TOXICOLOGICAL INFORMATION

Acute Toxicity:	Iron Glucoheptonate: LD50 oral (rat): 2735 mg/kg (100% basis) Manganese Glucoheptonate: Not Available, but for analogous sulfates: Manganese Sulfate: LD50 oral (rat): 2150 mg/kg (100% basis)
Likely Routes of Exposure:	Inhalation, ingestion or skin absorption
Symptoms and Signs of Exposure:	<u>Eyes</u> : Contact causes severe irritation and tissue damage; Eye burns, watering eyes. <u>Skin</u> : Prolonged or repeated contact with product mist or solution may cause skin irritation. Absorption is unlikely to occur. <u>Ingestion</u> : Ingestion of product solution may cause irritation of the gastrointestinal tract to include nausea, vomiting and diarrhea. <u>Inhalation</u> : Inhalation of product mist may cause irritation of the nose, throat and respiratory tract.
Chronic Effects:	None known
Carcinogenic:	None of this product's components are listed by ACGIH, OSHA, IARC, NIOSH or NTP as carcinogenic.
Mutagenicity:	Not Available
Reproductive Toxicity:	Not Available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity:	May be harmful to fish, livestock and wildlife due to low pH. This product is not bioaccumulative.
Other Adverse Effects:	Not harmful to ozone layer
Ecotoxicity:	Iron Glucoheptonate: Not Available Manganese Glucoheptonate: Not Available, However, for analogous, derived from water soluble manganese compound: LC50 Daphnia magna (Water Flea): 15200 ug/L/48 hr; static LC50 Canthocamptus sp (Harpacticoid Copepod): 150 ug/L/48 hr; static LC50 Pimephales promelas (Fathead Minnow): 30600 ug/L/96 hr; flow through

SECTION 13. DISPOSAL CONSIDERATIONS

General Information:	None
Disposal Instructions:	Agronomical land application at recommended rates or dispose of in accordance with local/regional/national regulations. Containers may be triple rinsed and offered for recycling

SECTION 14. TRANSPORT INFORMATION

This material is not hazardous as defined by 49 CFR 172.101 by the US Department of Transportation

Proper Shipping Name: Not Applicable

Hazard Class: Not Applicable

UN Identification #: Not Applicable

Packing Group: Not Applicable

Required Label(s): Not Applicable

Emergency Response Guide Number: Not Applicable

Marine Pollutant: Yes (Manganese)

SECTION 15. REGULATORY INFORMATION

TSCA Inventory Status All intentional ingredients listed on the TSCA inventory.

DSCL (EEC) Status All intentional ingredients listed on the DSCL inventory.

United States – SARA Hazard Category: This product has been reviewed according to the EPA Hazard Categories promulgated under Sections 311 and 312 of Title III of the Superfund Amendments and Reauthorization Act (SARA) and is considered, under applicable definitions, to meet the following categories:
Fire – No, Pressure – No, Acute – Yes, Chronic – No, Reactive – No

SARA Title III Information: This product contains the following substances subject to the reporting requirements of Title III (EPCRA) of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:

Manganese Glucoheptonate
CERCLA RQ (pounds): No RQ is assigned to these generic or broad classes, (Copper and Manganese compounds) although the class is a CERCLA hazardous substance. See 50 Federal Register 13456 (April 4, 1985).
SARA Reporting, 302: No
SARA Reporting, 304: No
SARA Reporting, 313: Yes, 1.0% de minimus concentration, N450 Manganese Compounds

Iron Glucoheptonate, Magnesium Glucoheptonate
CERCLA RQ (pounds): No
SARA Reporting, 302: No
SARA Reporting, 304: No
SARA Reporting, 313: No

Federal Insecticide, Fungicide, and Rodenticide Act
This product is not a pesticide.

State Regulations: Other state regulations may apply. Check individual state requirements.

SECTION 16. OTHER INFORMATION	
Date of Revision:	6/1/2026, revision prepared in accordance with 29 CFR 1910.1200 Appendix D to meet Global Harmonization Standards.
Disclaimer:	The information contained in this SDS refers only to the specific material designated and does not relate to any process or use with any other materials. This information is based on data believed to be accurate and reliable as of the date hereof. It is intended for use by persons possessing technical knowledge at their own discretion and risk. Because safety standards and regulations are subject to change and because Golf Ventures and Florida Turf Supply has no continuing control over the material, those handling, storing, or using the material should satisfy themselves that they have current information regarding the particular way the material is handled, stored or used and that the same is done in accordance with federal, state and local law. No warranty, expressed or implied, and no liability is assumed by Golf Ventures and Florida Turf Supply in conjunction with the use of this information. Nothing herein is to be construed as a recommendation to infringe any patents.