

SAFETY DATA SHEET

Verdant Root Drive

Date Prepared: 6/1/2026

Replaces: All Previous

SECTION 1. IDENTIFICATION

Product Name: Verdant Root Drive
Product 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

	WARNING	Skin Irritation Eye Irritation	Cat 2 Cat 2A	Causes skin and serious eye irritation
Precautionary Statements:	Prevention: Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Wear protective gloves, splash proof goggles, and face protection. Response: Get medical attention/advice if you feel unwell <u>If on skin (or hair):</u> Wash with plenty of water. Take off contaminated clothing and wash it 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. <u>If swallowed:</u> Rinse mouth, Do NOT induce vomiting. Drink 2 glasses of water. Storage: Keep container tightly closed when not in use. Store above 42°F. Disposal: Dispose of contents/containers in accordance with local/regional/national regulations (See Section 13 of SDS). Containers may be triple rinsed and offered for recycling.			

SECTION 3. COMPOSITION

Material	CAS #	EINECS #	%WT
Ammonium Nitrate	6484-52-2	229-347-8	4-6%
Magnesium EDTA	14402-88-1	14402-88-1	4-5%
Monopotassium Phosphate	7778-77-0	231-913-4	Proprietary Blend of Materials Not Classified as Hazardous or are below de minimus concentration limits.
Dipotassium Phosphate	7758-11-4	231-834-5	
Urea	57-13-6	200-315-5	
Ammonium Polyphosphate	68333-79-9	269-789-9	
Water (balance)	7732-18-5	231-791-2	

See product label for guaranteed analysis.

SECTION 4. FIRST AID MEASURES

General:	In case of persisting adverse effects consult a physician. Treat symptomatically.
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 to respiratory tract. 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.
Chronic Exposure Symptoms:	Not available

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 ammonia, oxides of sulfur, nitrogen, potassium, and phosphate and combustion products.
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:	Isolate area. Keep unnecessary personnel away. Avoid splashing or spraying. Caution should be exercised in the area of spilled material since solution can cause a slippery condition.
Protective Equipment:	Impervious gloves (rubber, neoprene or nitrile), Long sleeved clothing, Chemical splash-proof goggles. Chemical resistant apron and/or rubber boots may be needed. 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. Avoid infiltration into drains, sewers, surface water, groundwater and soil.
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:	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. Do not store combustibles in the area of storage vessels. Keep away from any sources of heat or flame. Store tote 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. Product solutions have been successfully stored in 316 stainless steel, fiberglass, polypropylene and HD polyethylene.
Incompatibilities:	Water reactive materials. Strong oxidizers. Avoid using containers, pipes and fittings made of aluminum, 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:	Urea	Not Established	PEL, OSHA
		10 mg/m ³	TWA, ACGIH
		Not Established	IDLH, NIOSH
		Not Established	REL, NIOSH
		Not Established	STEL, NIOSH
	Mono Potassium & Di Potassium Phosphate, Ammonium Nitrate, Ammonium Polyphosphate	Not Established	PEL, OSHA
		Not Established	TWA, ACGIH
		Not Established	IDLH, NIOSH
		Not Established	REL, NIOSH
		Not Established	STEL, NIOSH
Engineering Controls:	Unless misted by heat, agitation or spraying, natural ventilation should be adequate. Otherwise, provide local exhaust ventilation and wash facilities.		
Personal Protective Equipment:	<u>Eyes</u> : Splash-proof chemical goggles <u>Skin</u> : Impervious gloves (rubber, neoprene or nitrile). If skin irritation occurs, wear long sleeves. Chemically resistant apron is recommended. <u>Respiratory</u> : None required for ambient air concentrations (i.e. in the open under normal agronomic conditions). Use NIOSH approved mist respirator when dusts, mists, or vapors are present.		
General:	Eye wash stations and safety shower required.		

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Dark opaque liquid		
Odor:	mild	UEL / LEL:	Not Applicable
Odor Threshold:	Not Available	Vapor Pressure:	Similar to water
pH:	6 to 7	Density:	1.26 to 1.27 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:	Stable
Chemical Stability:	This product is stable under normal ambient conditions of temperature and pressure.
Possibility of Hazardous Reactions:	Hazardous polymerization will not occur.
Conditions to avoid:	Avoid exposure to extreme temperatures and contact with incompatible materials. Elevated temperatures may cause containers to rupture.
Incompatible Materials:	Water reactive materials Avoid using containers, pipes and fittings made of aluminum, copper, zinc or their alloys (e.g. brass). These materials of construction should not be used in handling systems or storage containers for this product.
Hazardous Decomposition Products:	Decomposition products are produce ammonia, oxides of sulfur, nitrogen, potassium, and phosphate.

SECTION 11. TOXICOLOGICAL INFORMATION

Acute Toxicity:	LD50 oral (rat): > 2000 mg/kg for all components
Likely Exposure Routes:	Contact with eyes, skin, ingestion, inhalation
Symptoms and Signs of Exposure:	<u>Eyes</u> : Low eye irritation potential. May cause temporary eye irritation. May cause redness and pain. <u>Skin</u> : Low skin irritation potential. May cause slight skin irritation. <u>Inhalation</u> : Repeated or prolonged inhalation of mists may lead to respiratory irritation. <u>Ingestion</u> : May cause digestive tract irritation, with accompanying nausea, vomiting and diarrhea.
Chronic Effects:	Not Available
Carcinogenic:	None of this product's components are listed by IARC, ACGIH, OSHA, NIOSH or NTP as carcinogenic.
Mutagenicity:	Not Available
Reproductive Toxicity:	Not Available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity:	In high concentrations, this product may be harmful to both terrestrial and aquatic plant and animal life. Not available for mono- and dipotassium phosphates and magnesium EDTA Urea: LC50 – <i>Poecilia reticulata</i> (guppy): 17,500 mg/L for 96 hrs Ammonium Polyphosphate LC50 (96 hr) <i>Oncorhynchus mykiss</i> : >101 mg/L Slightly toxic to practically non-toxic to aquatic organisms based on the Federal Insecticide Fungicide and Rodenticide Act (FIFRA) acute toxicity ratings Ammonium Nitrate: LC50 (48 hr) <i>Daphnia magna</i> (Water flea): 555 mg/L. Freshwater; static
Other Adverse Effects:	Not harmful to ozone layer

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:	No

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:	No chemicals in this material have hazard classifications under SARA Title III, Sec 311 and 312
SARA Title III Information:	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
Potassium Nitrate, 16% Ammonium Nitrate, 5%	CERCLA RQ (pounds): No SARA Reporting, 302: No SARA Reporting, 304: No SARA Reporting, 313: Yes, 1.0 % de minimus concentration (Chemical Category N511, Water Dissociable Nitrate)
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 Chemical Dynamics, Inc. 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 Chemical Dynamics, Inc. in conjunction with the use of this information. Nothing herein is to be construed as a recommendation to infringe any patents.