

SAFETY DATA SHEET

Dyna Gro Citrite 779




Date Prepared: 12/12/2013

Replaces: All Previous

SECTION 1. IDENTIFICATION

Product Name: Dyna Gro Citrite 779
 Synonyms: GRO779
 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
	DANGER	Oxidizing Liquid	Cat 2	May intensify fire; oxidizer
		Skin Corrosion Eye Damage Corrosive to Metals	Cat 1	Causes severe skin burns and eye damage May be corrosive to metals
		STOT: Repeat Exposure	Cat 2	May cause damage to central nervous system and lungs through prolonged or repeat exposure
Precautionary Statements:	<p>Prevention: Keep away from heat. Keep/Store away from clothing and combustible materials. Take any precaution to avoid mixing with combustibles. Wear protective gloves, chemical splash proof goggles and face protection. Do not breathe vapors, mists or sprays. Use only in a well-ventilated area. Wash thoroughly after use. Do not eat/drink/smoke when using this product. Keep in original container.</p> <p>Response: <u>If swallowed:</u> rinse mouth, Do NOT induce vomiting. Immediately call doctor. <u>If on skin (or hair):</u> Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. Immediately call doctor. <u>If inhaled:</u> Remove person to fresh air and keep comfortable for breathing. Immediately call doctor. <u>If in eyes:</u> Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call doctor. Get medical advice/attention if you feel unwell. Absorb spillage to prevent material damage.</p> <p>Storage: Store locked up. Store in a well-ventilated place. Keep container tightly closed. Store in corrosive resistant container (See Section 7 of SDS).</p> <p>Disposal: Dispose of contents/containers in accordance with local/regional/national regulations (See Section 13 of SDS).</p>			

SECTION 3. COMPOSITION

Material	CAS #	EINECS #	%WT
Manganese Nitrate	10377-66-9	233-828-8	16%
Magnesium Nitrate Hexahydrate	13446-18-9	233-826-7	21%
Zinc Nitrate	7779-88-6	231-943-8	13%
Iron Nitrate	10421-48-4	233-899-5	2%
Water	7732-18-5	231-791-2	balance

See product label for guaranteed analysis.

SECTION 4. FIRST AID MEASURES

Ingestion:	Rinse mouth. Do NOT induce vomiting. Drink large amounts of water. Never give anything by mouth to an unconscious person.
Skin Contact:	Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse.
Inhalation:	Remove person to fresh air and keep comfortable for breathing. If not breathing, give artificial respiration. Seek prompt medical attention.
Eye Contact:	Rinse cautiously with water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing eyes during transport to hospital.
Acute Exposure Symptoms:	Harmful if swallowed or inhaled. Immediately seek medical attention. Destructive to mucous membranes and upper respiratory tract, eyes and skin. Redness and irritation of tissue may occur. Immediately call doctor.
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:	Use water. Do not use dry chemicals or foams. CO2 or halon may provide limited control. Cool containers with water spray to avoid rupture due to thermal expansion.
Specific Hazards:	This product is an aqueous mixture which will not burn. Under fire conditions, this product behaves as an oxidizer. Contact with oxidizable substances may result in ignition. Violent combustion or explosion when involved in fire can occur. This material may decompose and produce acrid vapors, manganese compounds and oxides of nitrogen. For safety, avoid water spray with full jet to prevent spread of product.
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: 3, Fire: 0, Reactivity: 1, OX

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), Long sleeved clothing. Chemical splash-proof goggles, face shield. Chemical resistant apron and/or rubber boots may be needed.
Containment:	Stop flow of material if safe to do so. Dike area with diatomaceous earth or sand and maximize recovery. Do not absorb in saw dust.
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. Open containers carefully. 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 from direct sunlight, sources of intense heat, or where freezing is possible. Material should be stored in secondary containers or in a diked area, as appropriate. Do not store on wood floors. Keep containers tightly closed when not in use. Do not let product go below 32°F. Store locked up. Inspect all incoming containers before storage, to ensure containers are properly labeled and not damaged.
Incompatibilities:	Flammable and combustible materials, strong reducing agents, finely powdered metals. Keep away from intense heat or fire.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION			
Component Exposure Limits:	Manganese Nitrate $Mn(NO_3)_2$	5 mg/m ³	PEL, OSHA (fume, as Mn compounds)
		0.2 mg/m ³	TWA, ACGIH (fume, as Mn compounds)
		500 mg/m ³	IDLH, NIOSH (as Mn Compounds)
		1 mg/m ³	REL, NIOSH (as Mn Compounds)
		3 mg/m ³	STEL, NIOSH (as Mn Compounds)
	Iron Nitrate $Fe(NO_3)_3$	1 mg/m ³	PEL, OSHA (as soluble iron salts)
		1 mg/m ³	TLV, ACGIH (as soluble iron salts)
		Not Established	IDLH, NIOSH
		1 mg/m ³	REL, NIOSH (as soluble iron salts)
		Not Established	STEL, NIOSH
	Magnesium Nitrate Hexahydrate $Mg(NO_3)_2 \cdot 6H_2O$	Not Established	PEL, OSHA
		Not Established	TWA, ACGIH
	Zinc Nitrate $Zn(NO_3)_2$	Not Established	IDLH, NIOSH
		Not Established	REL, NIOSH
		Not Established	STEL, NIOSH

Engineering Controls:	Provide ventilation sufficient to maintain exposure below exposure limits. Washing facilities should be available.
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. Chemically resistant apron is recommended. <u>Respiratory:</u> None required for ambient air concentrations (i.e. in the open under normal agronomic conditions) not exceeding occupational exposure limits. Respiratory protection may be required in the event of a spill in an enclosed area. Use a NIOSH/MSHA approved SCBA with full face piece operated in a positive pressure mode when misting is present.
General:	Eye wash stations and safety shower required.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Clear, Orange Liquid		
Odor:	Slight acid odor	UEL / LEL:	Not Applicable
Odor Threshold:	Not Applicable	Vapor Pressure:	Similar to water
pH:	-1 to 0	Density:	1.47 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:	Similar to water	Decomposition Temp:	Not Available
Flammability (Solid/Gas):	Not Applicable	Viscosity	Not Available

SECTION 10. STABILITY AND REACTIVITY

Reactivity:	Product may act as an oxidizer, particularly if evaporated to dryness
Chemical Stability:	Stable under normal conditions
Possibility of Hazardous Reactions:	Hazardous polymerization will not occur.
Conditions to avoid:	Avoid exposure to extreme temperatures, contact with incompatible chemicals and all contact with combustible materials. Elevated temperatures may cause containers to rupture.
Incompatible Materials:	Flammable and combustible materials, strong reducing agents, finely powdered metals.
Hazardous Decomposition Products:	Manganese, Zinc, Magnesium and Iron compounds. Oxides of Nitrogen

SECTION 11. TOXICOLOGICAL INFORMATION

Acute Toxicity:	LD50 oral (rat): 9000 mg/kg (as 100% Manganese Nitrate) LD50 oral (rat): 3250 mg/kg (as 100% Iron Nitrate nonahydrate) LD50 oral (rat): 1558.7 mg/kg (as 100% Zinc Nitrate) LD50 oral (mouse): 241.3 mg/kg (as 100% Zinc Nitrate) LD50 oral (rat): 5440 mg/kg (as 100% Magnesium Nitrate Hexahydrate)
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Likely Routes of Exposure:	Inhalation, ingestion or skin absorption
Symptoms and Signs of Exposure:	<p><u>Eyes:</u> Contact can cause irritation, pain and redness. Severe exposure can result in conjunctiva along with tissue damage and blindness.</p> <p><u>Skin:</u> Depending on the duration of skin contact, symptoms will include reddening, discomfort, irritation and possible tissue damage and burns.</p> <p><u>Ingestion:</u> Immediately upon contact, this product will cause irritation and burns of the mouth, throat, esophagus and other tissues of the digestive system. Symptoms include nausea, abdominal pain, vomiting and diarrhea. The nitrate component may damage the oxygen transport system of the blood (methemoglobinemia). Severe ingestion exposure can be fatal.</p> <p><u>Inhalation:</u> Gases or mist causes irritation to the upper respiratory system, including the mucous membranes of the nose, mouth and throat. Coughing, fever, nausea, irritability, spasms, possible pneumonia, apathy, headaches, weakness and chemical burns if inhaled.</p>
Chronic Effects:	Manganese may lead to neurotoxicity that resembles Parkinson disease. These patients may have bradykinesia, resting tremor, psychiatric disturbances, and shuffling gait. Also, chronic excess manganese inhalational exposures may lead to pulmonary inflammation and subsequent reactive airway disease.
Carcinogenic:	None of this product's components are listed by ACGIH, OSHA, NIOSH or NTP as carcinogenic. IARC: 2A Probably carcinogenic to humans (Nitrates (ingested) under conditions that result in endogenous nitrosation)
Mutagenicity:	Not Available
Reproductive Toxicity:	Not Available

SECTION 12. ECOLOGICAL INFORMATION

General Information:	In high concentrations, this product may be dangerous to aquatic life and fouling shorelines.
Other Adverse Effects:	Not harmful to ozone layer
Ecotoxicity: Ferric Nitrate	LC50 Caenorhabditis elegans (Nematode) 0.32 ug/L/24 hr; static (as ferric nitrate)
Ecotoxicity: Zinc Nitrate	LC50 (96 hr) rainbow trout (juvenile): 0.43 mg/L. Flow-through, soft water. LC50 (96 hr) rainbow trout (juvenile): 1.2-7.2 mg/L. Flow-through, hard water. LC50 (96 hr) fathead minnow: 0.1-7.2 mg/L. LC50 (96 hr) bluegill: 0.1-7.2 mg/L
Ecotoxicity: Manganese Nitrate	NR-LETH Gasterosteus aculeatus (Threespine Stickleback): 300000 ug/L/10 days; renewal
Ecotoxicity: Magnesium Nitrate,	Not Available

SECTION 13. DISPOSAL CONSIDERATIONS	
General Information:	As packaged, this product is a D001 ignitable and D002 corrosive waste per 40 CFR 261; applicable to wastes containing this product.
Disposal Instructions:	Agronomical land application at recommended rates or dispose of in accordance with local/regional/national regulations.
SECTION 14. TRANSPORT INFORMATION	
This material is hazardous as defined by 49 CFR 172.101 by the US Department of Transportation	
Proper Shipping Name:	Corrosive Liquid, Oxidizing, N.O.S. (Acidic Nitrate Based Fertilizer Solution)
Hazard Class:	8 (5.1)
UN Identification #:	3093
Packing Group:	II
Required Label(s):	Corrosive, Oxidizer
Emergency Response Guide Number:	140
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 – Yes, Reactive – Yes
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: CERCLA RQ (pounds): <ul style="list-style-type: none"> - Zinc Nitrate: 1000 lbs (100% basis), 7692 lbs of this product - Ferric Nitrate: 1000 lbs (100% basis), 50,000 lbs of this product - Manganese Nitrate: No RQ is assigned to this generic or broad class (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 (Manganese Compounds N450), 1.0% de minimus concentration (Zinc Compounds, N982) and 1.0% de minimus concentration (Chemical Category N511, Water Dissociable Nitrate)
State Regulations:	Other state regulations may apply. Check individual state requirements.
	One or more components appear on one or more of the following state hazardous substance lists: CA, FL, MA, MN, NJ, PA, RI

SECTION 16. OTHER INFORMATION

Date of Revision:	12/12/2013, 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.