

**SAFETY DATA SHEET**

Dyna Gro MZN




Date Prepared: 5/30/2014

Replaces: All Previous

**SECTION 1. IDENTIFICATION**

Product Name: Dyna Gro MZN  
 Synonyms: GROMZN  
 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
	<b>DANGER</b>	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
<b>Precautionary Statements:</b>	<p><b>Prevention:</b> 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><b>Response:</b> <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><b>Storage:</b> Store locked up. Store in a well-ventilated place. Keep container tightly closed. Store in corrosive resistant container (polyethylene, polypropylene or fiberglass, see Section 7 of SDS).</p> <p><b>Disposal:</b> 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.</p>			

**SECTION 3. COMPOSITION**

<b>Material</b>	<b>CAS #</b>	<b>EINECS #</b>	<b>%WT</b>
Manganese Nitrate	10377-66-9	233-828-8	33%
Zinc Nitrate	7779-88-6	231-943-8	16%
Water	7732-18-5	231-791-2	balance

See product label for guaranteed analysis.

**SECTION 4. FIRST AID MEASURES**

<b>Ingestion:</b>	Rinse mouth. Do NOT induce vomiting. Drink large amounts of water. Never give anything by mouth to an unconscious person.
<b>Skin Contact:</b>	Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse.
<b>Inhalation:</b>	Remove person to fresh air and keep comfortable for breathing. If not breathing, give artificial respiration. Seek prompt medical attention.
<b>Eye Contact:</b>	Rinse cautiously with water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing eyes during transport to hospital.
<b>Acute Exposure Symptoms:</b>	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.
<b>Chronic Exposure Symptoms:</b>	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**

<b>Extinguishing Media:</b>	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.
<b>Specific Hazards:</b>	This product is an aqueous mixture which will not burn. Under fire conditions, this product behaves as an oxidizer, particularly if evaporated to dryness. 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 and zinc compounds, carbon dioxide and oxides of nitrogen. For safety, avoid water spray with full jet to prevent spread of product.
<b>Protective Equipment and Precautions for Fire-Fighters:</b>	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.
<b>NFPA Rating:</b>	Health: 3, Fire: 0, Reactivity: 1, OX

SECTION 6. ACCIDENTAL RELEASE MEASURES	
<b>Precautions:</b>	Corrosive liquid. Isolate area. Keep unnecessary personnel away. Avoid splashing or spraying. Do not touch or walk through spilled material.
<b>Protective Equipment:</b>	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.
<b>Containment:</b>	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.
<b>Clean Up:</b>	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	
<b>Precautions for safe handling:</b>	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.
<b>Conditions for safe storage:</b>	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 35°F. Store locked up. Inspect all incoming containers before storage, to ensure containers are properly labeled and not damaged.
<b>Incompatibilities:</b>	Flammable and combustible materials, strong reducing agents, finely powdered metals. Keep away from intense heat or fire.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION			
<b>Component Exposure Limits:</b>	Manganese Nitrate Mn(NO <sub>3</sub> ) <sub>2</sub>	5 mg/m <sup>3</sup>	PEL, OSHA (fume, as Mn compounds)
		0.2 mg/m <sup>3</sup>	TWA, ACGIH (fume, as Mn compounds)
		500 mg/m <sup>3</sup>	IDLH, NIOSH (as Mn Compounds)
		1 mg/m <sup>3</sup>	REL, NIOSH (as Mn Compounds)
		3 mg/m <sup>3</sup>	STEL, NIOSH (as Mn Compounds)
	Zinc Nitrate Zn(NO <sub>3</sub> ) <sub>2</sub>	Not Established	PEL, OSHA
		Not Established	TWA, ACGIH
		Not Established	IDLH, NIOSH
		Not Established	REL, NIOSH
		Not Established	STEL, NIOSH
<b>Engineering Controls:</b>	Provide ventilation sufficient to maintain exposure below exposure limits. Washing facilities should be available.		
<b>Personal Protective Equipment:</b>	<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.
<b>General:</b>	Eye wash stations and safety shower <u>required</u> .

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES			
<b>Appearance:</b>	Clear, Light Pink Liquid		
<b>Odor:</b>	Slight acid odor	<b>UEL / LEL:</b>	Not Applicable
<b>Odor Threshold:</b>	Not Applicable	<b>Vapor Pressure:</b>	Similar to water
<b>pH:</b>	-0.5	<b>Density:</b>	1.56 to 1.58 g/cm <sup>3</sup>
<b>Melting/Freezing Point:</b>	< 0°C (< 32°F)	<b>Solubility:</b>	Water
<b>Boiling Point:</b>	> 100°C (>212°F)	<b>Log<sub>ow</sub>:</b>	Not Available
<b>Flash Point:</b>	Not Applicable	<b>Auto Ignition Temp:</b>	Not Applicable
<b>Evaporation Rate:</b>	Similar to water	<b>Decomposition Temp:</b>	Not Available
<b>Flammability (Solid/Gas):</b>	Not Applicable	<b>Viscosity</b>	Not Available

SECTION 10. STABILITY AND REACTIVITY	
<b>Reactivity:</b>	Product may act as an oxidizer, particularly if evaporated to dryness
<b>Chemical Stability:</b>	Stable under normal conditions
<b>Possibility of Hazardous Reactions:</b>	Hazardous polymerization will not occur.
<b>Conditions to avoid:</b>	Avoid exposure to extreme temperatures, contact with incompatible chemicals and all contact with combustible materials. Elevated temperatures may cause containers to rupture.
<b>Incompatible Materials:</b>	Flammable and combustible materials, strong reducing agents, finely powdered metals.
<b>Hazardous Decomposition Products:</b>	Manganese and Zinc compounds. Oxides of Nitrogen and Carbon

SECTION 11. TOXICOLOGICAL INFORMATION	
<b>Acute Toxicity:</b>	LD50 oral (rat): 9000 mg/kg (as 100% Manganese Nitrate) LD50 oral (rat): 1558.7 mg/kg (as 100% Zinc Nitrate)
<b>Likely Routes of Exposure:</b>	Inhalation, ingestion or skin absorption
<b>Symptoms and Signs of Exposure:</b>	<u>Eyes:</u> Contact can cause irritation, pain and redness. Severe exposure can result in conjunctiva along with tissue damage and blindness. <u>Skin:</u> Depending on the duration of skin contact, symptoms will include reddening, discomfort, irritation and possible tissue damage and burns. <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. Severe ingestion exposure can be fatal. <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.
<b>Chronic Effects:</b>	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.
<b>Carcinogenic:</b>	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)
<b>Mutagenicity:</b>	Not Available
<b>Reproductive Toxicity:</b>	Not Available

#### SECTION 12. ECOLOGICAL INFORMATION

<b>General Information:</b>	In high concentrations, this product may be dangerous to aquatic life and fouling shorelines.
<b>Other Adverse Effects:</b>	Not harmful to ozone layer
<b>Ecotoxicity:</b> 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
<b>Ecotoxicity:</b> Manganese Nitrate	NR-LETH <i>Gasterosteus aculeatus</i> (Threespine Stickleback): 300000 ug/L/10 days; renewal

#### SECTION 13. DISPOSAL CONSIDERATIONS

<b>General Information:</b>	As packaged, this product is a D001 ignitable and D002 corrosive waste per 40 CFR 261; applicable to wastes containing this product.
<b>Disposal Instructions:</b>	Agronomical land application at recommended rates or dispose of in accordance with local/regional/national regulations.

#### SECTION 14. TRANSPORT INFORMATION

<b>This material is hazardous as defined by 49 CFR 172.101 by the US Department of Transportation</b>	
<b>Proper Shipping Name:</b>	Corrosive Liquid, Oxidizing, N.O.S. (Manganese Nitrate)
<b>Hazard Class:</b>	8 (5.1)
<b>UN Identification #:</b>	3093
<b>Packing Group:</b>	II
<b>Required Label(s):</b>	Corrosive, Oxidizer
<b>Emergency Response Guide Number:</b>	140
<b>Marine Pollutant:</b>	Yes

<b>SECTION 15. REGULATORY INFORMATION</b>	
<b>TSCA Inventory Status</b>	All intentional ingredients listed on the TSCA inventory.
<b>DSCL (EEC) Status</b>	All intentional ingredients listed on the DSCL inventory.
<b>United States – SARA Hazard Category:</b>	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
<b>SARA Title III Information:</b>	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"> <li>- Zinc Nitrate: 1000 lbs (100% basis), 7692 lbs of this product</li> <li>- 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).</li> </ul> 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)
<b>State Regulations:</b>	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
<b>SECTION 16. OTHER INFORMATION</b>	
<b>Date of Revision:</b>	5/30/2014, revision prepared in accordance with 29 CFR 1910.1200 Appendix D to meet Global Harmonization Standards.
<b>Disclaimer:</b>	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.