

SAFETY DATA SHEET

Dyna Gro Copper



Date Prepared: 5/22/2014

Replaces: All Previous

SECTION 1. IDENTIFICATION

Product Name: Dyna Gro Copper
 Product Number: Copper Nitrate Solution, GROCU
 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	Skin Corrosion Eye Damage Corrosive to Metals	Cat 1	Causes severe skin burns and serious eye damage. May be Corrosive to Metals
		Oxidizing Liquid	Cat 3	May intensify fire; oxidizer
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 outdoors or in a well-ventilated area. Wash thoroughly after handling. Keep in original container.</p> <p>Response: <u>If swallowed:</u> rinse mouth, Do NOT induce vomiting. <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 corrosive resistant container (polyethylene, polypropylene or fiberglass, See Section 7 of SDS).</p> <p>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. Do not reuse container.</p>			

SECTION 3. COMPOSITION

Material	CAS #	EINECS #	%WT
Copper Nitrate	3251-23-8	221-838-5	41%
Nitric Acid	7697-37-2	231-714-2	5%
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. Get medical attention immediately.
Skin Contact:	Immediately Take of immediately all contaminated clothing and rinse skin with water/shower. Wash contaminated clothing before reuse. Get medical attention immediately.
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. This product is corrosive to all tissues with which it comes in contact. Skin: Depending on the duration of contact, symptoms will include reddening, discomfort, irritation, ulceration, and chemical burns. Inhalation of the vapor or mist can cause eye, nose, throat, and respiratory irritation or coughing. Ingestion: Can be harmful or fatal. Immediately upon contact, this product will cause irritation and burns of the mouth, throat, esophagus, and other tissues of the digestive system. Overexposure symptoms include: drowsiness, confusion, difficulty swallowing, a burning sensation in the esophagus and stomach, intense thirst, nausea, abdominal pain, vomiting, diarrhea, stomach perforation, bloody stools or urine, convulsions, and collapse. Large quantity ingestion may be fatal. Eyes: cause irritation, pain, reddening, and may result in blindness depending on the duration.
Chronic Exposure Symptoms:	Prolonged and/or repeated skin contact with this product may cause irritation/dermatitis or burns.

SECTION 5. FIRE FIGHTING MEASURES

Extinguishing Media:	This product is non-flammable. Use appropriate media for surrounding fire. Cool containers with water spray to avoid rupture due to thermal expansion.
Specific Hazards:	This product is an aqueous mixture and is not flammable. If evaporated to dryness, the solid residue may pose a slight fire hazard. This product is an oxidizing agent, which may cause spontaneous ignition of combustible materials. If material is exposed to prolonged heat in a fire, material may release acrid compounds, oxides nitrogen and copper compounds. For safety, avoid water spray with full jet to prevent spread of product.
PPE & 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: 0

SECTION 6. ACCIDENTAL RELEASE MEASURES

Precautions:	Corrosive liquid. Isolate area. Keep unnecessary personnel away. Avoid splashing or spraying. Do no 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.
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. Do not absorb into sawdust. 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 locked up. 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. Inspect all incoming containers before storage, to ensure containers are properly labeled and not damaged. Polyethylene, polypropylene or fiberglass are acceptable storage materials. Do not allow product to dry out.
Incompatibilities:	Flammable and combustible materials, strong reducing agents and bases (such as ammonium hydroxide), finely powdered metals, cyanide compounds, active metals like sodium or potassium. Keep away from intense heat or fire

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Component Exposure Limits:	Copper Nitrate Cu(NO ₃) ₂	0.1 mg/m ³	PEL, OSHA (Fume, dusts, mists as Cu)
		Not Established	STEL, OSHA
		0.1 mg/m ³	TLV, ACGIH (as Cu)
		100 mg/m ³	IDLH, NIOSH (as Cu)
		Not Established	REL, NIOSH
		Not Established	STEL, NIOSH
	Nitric Acid HNO ₃	2 ppm	PEL, OSHA
		Not Established	STEL, OSHA
		2 ppm	TLV, ACGIH
		25 ppm	IDLH, NIOSH
		Not Established	REL, NIOSH
		4 ppm	STEL, NIOSH
Engineering Controls:	Provide local exhaust ventilation and wash facilities. Eye wash stations and safety showers required.		

Personal Protective Equipment:	<p><u>Eyes:</u> Chemical splash-proof goggles and face shield</p> <p><u>Skin:</u> Impervious gloves (rubber, neoprene or nitrile), long sleeved clothing. Chemically resistant apron is recommended.</p> <p><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. Wear NIOSH approved respiratory protective equipment when vapor or mists may exist as well as a chemical suit.</p>
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SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Clear, blue liquid		
Odor:	Acrid odor	UEL / LEL:	Not Applicable
Odor Threshold:	Not Available	Vapor Pressure:	Not Available
pH:	-0.5 to 0.5	Density:	1.44 to 1.48 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 is acidic. 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.
Incompatible Materials:	Strong bases (e.g. aqua ammonia), active metals (e.g., sodium, potassium), cyanide compounds, flammable and combustible materials, strong reducing agents, finely powdered metals.
Hazardous Decomposition Products:	Copper compounds and oxides of nitrogen.

SECTION 11. TOXICOLOGICAL INFORMATION

Acute Toxicity:	<p>Copper Nitrate LD50 oral (rat): 940 mg/kg</p> <p>Nitric Acid LC50 inhalation (rat): 7 mg/L 4 hr LC50 inhalation (rat): 334 ppm/30 min</p>
Likely Routes of Exposure:	Inhalation of mist, eye, and skin contact.
Symptoms and Signs of Exposure:	<p><u>Eyes:</u> cause irritation, pain, reddening, and may result in blindness depending on the duration.</p> <p><u>Skin:</u> Depending on the duration of contact, symptoms will include</p>

	<p>reddening, discomfort, irritation, ulceration, and chemical burns.</p> <p><u>Ingestion:</u> Can be harmful or fatal. Immediately upon contact, this product will cause irritation and burns of the mouth, throat, esophagus, and other tissues of the digestive system. Overexposure symptoms include: drowsiness, confusion, difficulty swallowing, a burning sensation in the esophagus and stomach, intense thirst, nausea, abdominal pain, vomiting, diarrhea, stomach perforation, bloody stools or urine, convulsions, and collapse. Large quantity ingestion may be fatal. The nitrate component may reduce the blood's ability to transport oxygen causing headache, fatigue, dizziness and blue lips and skin (methemoglobinemia). Symptoms may be delayed.</p> <p><u>Inhalation:</u> Can cause eye, nose, throat, and respiratory irritation or coughing, burns.</p>
Chronic Effects:	Prolonged and/or repeated skin contact with this product may cause irritation/dermatitis.
Carcinogenic:	<p>None of this product's components are listed by ACGIH, OSHA, NIOSH or NTP as carcinogenic.</p> <p>IARC: 2A Probably carcinogenic to humans (Nitrates (ingested) under conditions that result in endogenous nitrosation)</p>
Mutagenicity:	Not Available
Reproductive Toxicity:	Not Available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity:	Due to the low pH associated with this product, plants contaminated with this product may be adversely affected or destroyed. Animals contaminated with this solution may be severely injured or killed.
Other Adverse Effects:	Not harmful to ozone layer
Ecotoxicity:	<p>Copper Nitrate</p> <p>LC50 Ceriodaphnia dubia (Water Flea): 286 ug/L/48 hrs; renewal LC50 Homarus americanus (American Lobster): 48 ug/L/48 hrs; static LC50 Cyprinus carpio (Common Carp): 105 ug/L/48 hrs; static LC50 Gambusia affinis (Western Mosquitofish): 140 ug/L/48 hrs; static</p> <p>Nitric Acid</p> <p>LC50 Carcinus maenas (Green Crab): 180000 ug/L/48 hrs; static LC50 Gambusia affinis (Western Mosquitofish): 75000 ug/L/48 hrs; static</p>

SECTION 13. DISPOSAL CONSIDERATIONS

General Information:	As packaged, this product is a D001 ignitable waste and a D002 corrosive waste per 40 CFR 261; applicable to wastes containing this product.
Disposal Instructions:	<p>Agronomical land application at recommended rates or dispose of in accordance with local/regional/national regulations. Container contents should be completely used and the containers rinsed prior to discard. Rinsate should be treated as a corrosive material. Dispose of in accordance with product characteristics at time of disposal.</p>

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, acidic, inorganic, n.o.s. (Copper Nitrate, Nitric acid)
Hazard Class:	8
UN Identification #:	3264
Packing Group:	II
Required Label(s):	Corrosive
Emergency Response Guide Number:	154
Marine Pollutant:	DOT regulated severe marine pollutant
Special Provisions for Transportation	Not classified as a Division 5.1 Oxidizer – 49 CFR 172.102 Special Provision 58.

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 – 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:
Copper Nitrate CAS No. 3251-23-8	CERCLA RQ (pounds): 100 lbs SARA Reporting, 302: Yes, 1000 lbs SARA Reporting, 304: No SARA Reporting, 313: 1.0 % de minimis concentration (Copper Compounds, N100) and 1.0% de minimus concentration (Chemical Category N511, Water Dissociable Nitrate)
Nitric Acid CAS No. 7697-37-2	CERCLA RQ (pounds): 1000 lbs SARA Reporting, 302: 1000 lbs TPQ SARA Reporting, 304: 1000 lbs SARA Reporting, 313: 1.0% de minimus concentration
Federal Insecticide, Fungicide, and Rodenticide Act	This product is not a pesticide.
State Regulations:	Other state regulations may apply. Check individual state requirements.
Copper Nitrate CAS No. 3251-23-8	CA, FL, MA, MN, NJ, PA, RI
Nitric Acid CAS No. 7697-37-2	CA, FL, MA, MN, NJ, PA, RI

SECTION 16. OTHER INFORMATION

Date of Revision:	5/22/2014, 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.