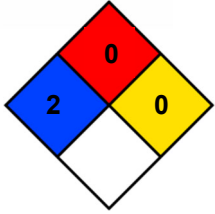




SAFETY DATA SHEET

HUMA GRO® Copper



HMIS	
HEALTH	2
FLAMMABILITY	0
PHYSICAL HAZARD	0
PPE	B

SECTION 1: CHEMICAL PRODUCT & COMPANY IDENTIFICATION

PRODUCT	HUMA GRO® Copper	Product #040
GENERAL USE:	Used as a part of a plant nutrition program and in the production of plant nutrient products.	
PRODUCT DESCRIPTION:	A clear to slightly hazy, royal blue liquid having a very slight characteristic odor.	
SUPPLIER INFORMATION:	Bio Huma Netics, Inc. 1331 W Houston Avenue Gilbert, AZ 85233	EMERGENCY PHONE NUMBERS
For Additional SDS call:	PHONE: (480) 961-1220	CHEMTREC: (In the USA) 800-424-9300 (International) 703-527-3887

SECTION 2: HAZARDS IDENTIFICATION

HAZARDS OVERVIEW:

A clear to slightly hazy, royal blue liquid having a very slight characteristic odor. The vapors, mists and liquid may cause severe irritation or burns to the eyes, and irritation to the skin and respiratory tract. It is toxic by ingestion and may be fatal if ingested in large quantities. Toxic to aquatic life due to copper sulfate content.



CLASSIFICATION: HAZARD CATEGORY 4

SIGNAL WORD: WARNING

HAZARD STATEMENT: H302; Harmful if Swallowed

PRECAUTIONARY STATEMENT: P301+P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell, P330; Rinse Mouth P264; Wash hands thoroughly after handling, P270; Do not eat, drink or smoke when using this product.



CLASSIFICATION: HAZARD CATEGORY 2

SIGNAL WORD: N/A

HAZARD STATEMENT: H411; Toxic to aquatic life with long lasting effects.

PREVENTION: P273; Avoid release to the environment if this is not the intended use; P391; Collect spillage; P501; Dispose of contents/containers in accordance with federal, state and local laws regulating fertilizers.

CLASSIFICATION: HAZARD CATEGORY 3

SIGNAL WORD: WARNING

HAZARD STATEMENT: H316 - WARNING - causes mild skin irritation

PRECAUTIONARY STATEMENT: P332+P313; If skin irritation occurs: Get medical attention/advice.

SECTION 3: COMPOSITION & INFORMATION ON INGREDIENTS

COMPONENT	CAS #	OSHA HAZARD	WT %	ACGIH		OSHA	
				TLV _(TWA)	STEL	PEL _(TWA)	STEL
Copper Sulfate*	7758-98-7	Strong Eye Irritant; Skin & Respiratory Irritant; Blood, Liver & Kidney toxin	17.0 ± 1	1 mg/m ³ (Dusts & Mists as Cu)	None	None	None

* (DOT name is Cupric Sulfate)

NDA = No Data Available

N/A = Not Applicable

SECTION 4: FIRST AID MEASURES

INHALATION:	If inhaled, immediately move to fresh air. If not breathing, give artificial respiration. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; use the Holger Nielsen method (back pressure-arm lift) or proper respiratory device. If breathing is difficult, give oxygen. Call a physician.
EYE CONTACT:	In case of contact, immediately flush eyes with plenty of clean running water for at least 15 minutes, lifting the upper and lower lids occasionally. Remove contact lenses, if worn. Get medical attention.
SKIN CONTACT:	In case of contact, flush skin with plenty of clean running water. Remove contaminated clothing and shoes and wash before reuse. If irritation occurs and persists, get medical attention.
INGESTION:	If swallowed, get medical attention immediately. Induce vomiting immediately, as directed by medical personnel. Never give anything by mouth to an unconscious person.
NOTE TO PHYSICIANS:	Copper Sulfate is toxic, and irritating to the eyes, skin and mucous membranes. If ingested, consideration should be given to careful endoscopy as stomach or esophageal irritation may occur. Careful gastric lavage with an endotracheal tube in place should be considered. Treat exposure symptomatically.

SECTION 5: FIRE FIGHTING MEASURES

Flashpoint and Method:	This product does not flash.		
Flammable Limits (in air, % by volume)	Lower:	Not applicable	Upper: Not applicable
Autoignition Temperature:	Not applicable		
GENERAL HAZARD:	This product is a non-combustible, inorganic, acidic, aqueous solution. The Uniform Fire Code health hazard classification for this product is: Irritant . It may produce hazardous mists or hazardous decomposition products.		
FIRE FIGHTING INSTRUCTIONS:	EXTINGUISHING MEDIA: Water fog or spray, foam, CO ₂ and dry chemicals. Use a water fog or spray to cool the containers exposed to the heat of a fire.		
FIRE FIGHTING EQUIPMENT:	Fire fighters should wear full protective equipment, including self-contained breathing apparatus.		
HAZARDOUS COMBUSTION PRODUCTS:	When heated to dryness and decomposition, it emits toxic copper and sulfur oxides, with trace or ultra-trace toxic oxide amounts, of phosphorus, potassium, nitrogen, iron, magnesium, zinc, manganese, calcium, sodium and carbon.		

SECTION 6: ACCIDENTAL RELEASE MEASURES

RELEASE TO LAND:	Wearing recommended protective equipment and clothing, dike the spill and pick up the bulk of liquid using pumps or a vacuum truck, or absorb the liquid in sand or a commercial absorbent. Place in approved containers for recovery, disposal, or satellite accumulation. Neutralize the acidity, of the remaining liquid, using soda ash, lime, or other agent appropriate for neutralizing acidic liquids. Flush the spill area with water; collect the rinsates for disposal, as appropriate.
RELEASE TO WATER:	Wear recommended protective equipment and clothing if contact with hazardous material can occur. Stop or divert water flow. Dike contaminated water and remove for disposal and/or treatment. As appropriate, notify all downstream users of possible contamination.

SECTION 7: HANDLING AND STORAGE

STORAGE TEMPERATURE:	Ambient	STORAGE PRESSURE:	Ambient
GENERAL:	Store in a cool, dry, well-ventilated area away from incompatible materials and products. Avoid getting this product in eyes, on skin or on clothing. Wear recommended personnel protective equipment when handling this product. Do not breathe mists, vapors, or aerosols. Use with adequate ventilation. Do not take internally. Keep the container tightly closed when not in use. Wash thoroughly after handling this product.		

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

CONTROL MEASURES: Use a local or general, mechanical exhaust ventilation system capable of maintaining emissions, in the work area, below the ACGIH-TLV, for Copper, or levels that may cause irritation.

RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT

RESPIRATOR: For exposure above the ACGIH-TLV, for Copper, or levels that may cause irritation, wear a NIOSH-approved full facepiece or half mask air-purifying cartridge respirator equipped with a good mist / particulate filter cartridge or supplied air. **Note:** Always consult the respirator manufacturer's data when determining the suitability of respiratory protective devices prior to use.

EYES: Wear chemical goggles (recommended by ANSI Z87.1-1979), unless a full facepiece respirator is worn. **Note:** Always consult the protective eyewear manufacturer's data when determining the suitability of protective eyewear prior to use.

GLOVES: Wear Neoprene, Nitrile, Butyl Rubber or Natural Rubber gloves. **Note:** Always consult the glove manufacturer's permeation data when determining the suitability of gloves prior to use.

CLOTHING & EQUIPMENT: Wear a Neoprene, Nitrile, Butyl Rubber or Natural Rubber apron, or full protective clothing when handling this product. An eye wash station and safety shower should be available in the work area. **Note:** Always consult the clothing/equipment manufacturer's permeation data when determining the suitability of clothing/equipment prior to use.

FOOTWEAR: Wear Neoprene, Nitrile, Butyl Rubber or Natural Rubber boots. **Note:** Always consult the footwear manufacturer's permeation data when determining the suitability of footwear prior to use.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Clear to slightly hazy, royal blue	Bulk Density (pounds/ft³):	Not applicable
Physical State:	Liquid	Vapor Pressure:	No data available
Odor:	Very slight, characteristic	Vapor Density (air=1):	No data available
Odor Threshold:	No data available	Evaporation Rate (n-Butyl Acetate=1):	No data available
Molecular Formula:	Mixture	VOC Content / Organic Matter:	No data available / 0.2%
Molecular Weight:	Not applicable	% Volatile:	No data available
Boiling Point:	Greater than 100° C. (212° F.)	Solubility in H₂O:	Complete
Freezing/Melting Point:	Less than 0° C. (32° F.)	Octanol/Water Partition Coefficient:	No data available
Specific Gravity:	1.10 – 1.25 @ 20° C.	pH (as is):	2.0 - 3.0
Density (pounds/gallon):	Approximately 9.77	pH (1% solution):	No data available

SECTION 10: STABILITY AND REACTIVITY

GENERAL: This product is stable and hazardous polymerization will not occur.

CONDITIONS TO AVOID: Do not store this product below 50° F (10° C) or above 90° F (30° C)

INCOMPATIBLE MATERIAL: Caustics and alkali, sulfides, sulfites, cyanides and chlorine releasers.

HAZARDOUS DECOMPOSITION PRODUCTS: When heated to dryness and decomposition, it emits toxic oxides of copper and sulfur, with trace or ultra-trace toxic oxide amounts, of phosphorus, potassium, nitrogen, iron, magnesium, zinc, manganese, calcium, sodium and carbon.

SENSITIVITY TO MECHANICAL IMPACT: This product is not sensitive to mechanical impact.

SENSITIVITY TO STATIC DISCHARGE: This product is not sensitive to static discharge.

SECTION 11: TOXICOLOGICAL INFORMATION

Components:	Copper Sulfate
Eye Contact:	No data available
Skin Contact:	No data available
Oral Rat LD₅₀:	300 mg/kg
Dermal Rabbit LD₅₀:	No data available (Dermal Rat Subcutaneous LD ₅₀ : 43 mg/kg)
Inhalation Rat LC₅₀:	No data available
Human Data:	Oral Human TD _{L0} : 11 mg/kg; Toxic Effects: Gastrointestinal – Gastritis, Hypermotility, diarrhea, nausea or vomiting
Other Toxicological Data:	Oral Child TD _{L0} : 150 mg/kg; Toxic Effects: Kidney, Ureter and Bladder – Changes in tubules (acute renal failure)
Carcinogenicity:	Parenteral Chicken TD _{L0} : 10 mg/kg; Equivocal tumorigenic agent by RTECS criteria; Endocrine – Tumors
Teratogenicity:	Intratesticular Rat TD _{L0} : 3,192 ug/kg (male 1 Day prior to mating); Paternal Effects – Spermatogenesis, epididymis
Mutagenicity:	Rat DNA Damage; Ascites tumor: 500 umol/Liter; (Rat DNA Damage; liver: 1 mmol/Liter)
Synergistic Products:	None reported
Target Organs:	Eyes, Skin, Mucous membranes, Lungs, Liver, Kidneys & Blood
Medical Conditions Aggravated By Exposure:	Wilson's Disease, Skin, Liver, Kidney & Respiratory disorders

SECTION 12: ECOLOGICAL INFORMATION

ENVIRONMENTAL FATE:

This product is completely soluble in water and can affect the pH of water. No specific environmental fate data is available.

ENVIRONMENTAL CONSIDERATIONS:

The exact aquatic toxicity for this product has not been determined, however, the EPA has determined that Copper Sulfate salts are toxic to fish and aquatic organisms. The DOT lists Copper Sulfate as a severe marine pollutant.

SECTION 13: DISPOSAL CONSIDERATIONS

RCRA 40 CFR 261 CLASSIFICATION: Non-RCRA Hazardous Waste

U.S. EPA WASTE NUMBER/DESCRIPTION: Not Applicable

If this product is disposed of as shipped, it does not meet the criteria of a hazardous waste as defined under 40 CFR 261, in that it does not exhibit the characteristics of a hazardous waste of Subpart C, nor is it listed as a hazardous waste under Subpart D due to toxicity. As a non-RCRA hazardous liquid waste, it should be disposed of in accordance with all local, state, and federal regulations. Consult state or local officials for proper disposal method.

SECTION 14: TRANSPORTATION INFORMATION

DOT PROPER SHIPPING NAME: Environmentally hazardous substances, liquid, n.o.s. (Cupric Sulfate)
Hazard Class: 9 **UN Number:** UN3082 **Packing Group:** III
Primary Label: Class 9 **Subsidiary Label(s):** None
Primary/Subsidiary Placards: Class 9

DOT Reportable Quantity (RQ): 10 pounds (CuSO₄) **RQ for Product:** 74 lbs. (7.8 gallons)
Marine Pollutant: Yes (Severe Marine Pollutant) Applicable to transport by water & in a bulk packaging.

2012 North American Emergency Response Guidebook No.: 171

TDG PROPER SHIPPING NAME: Environmentally hazardous substances, liquid, n.o.s. (Cupric Sulfate)
Hazard Class: 9 **UN Number:** UN3082 **Packing Group:** III
Primary Label: Class 9 **Subsidiary Label(s):** None
Primary/Subsidiary Placards: Class 9

TDG Reportable Quantity (RQ): * At least 1 kg
TDG Schedule XII: Not listed
Regulated Limit (RL): ** Not listed **RL for Product:** N/A
Other Shipping Information: None

* Canadian Transportation of Dangerous Goods Regulations (TDGR), Part IX, Table I, Quantities or levels for Immediate Reporting: releases of reportable quantities, RQ, that meet the definition of a "dangerous occurrence" (a threat to life, health, property, or the environment) must be reported to the appropriate authorities as outlined in TDGR 9.13(1) and 9.14(1). ** Reporting to Environment Canada is required for any releases exceeding the regulated limits, RL, of 9.2 materials (primary or secondary). The regulated limits are found in Schedule XIII of the TDGR.

SECTION 15: REGULATORY INFORMATION

COMPONENTS: Copper Sulfate

OSHA Target Organs: Eyes, Skin, Mucous membranes, Lungs, Liver, Kidneys & Blood

Carcinogenic Potential:

Regulated by OSHA:	No
Listed on NTP Report:	No
Listed by IARC:	No
IARC Group:	Not applicable
ACGIH Appendix A:	Not listed
A1 Confirmed Human:	Not applicable
A2 Suspected Human:	Not applicable

U.S. EPA Requirements

Release Reporting

CERCLA (40 CFR 302)

Listed Substance: Yes
Reportable Quantity: 10 pounds (Anhydrous)
Category: A
RCRA Waste No.: Not listed

Unlisted Substance: Not applicable
Reportable Quantity: Not applicable
Characteristic: Not applicable
RCRA Waste No.: Not applicable

SARA TITLE III

Section 302 & 303 (40 CFR 355):

Listed Substance: Not listed
Reportable Quantity: Not applicable
Planning Threshold: Not applicable

SECTION 15: REGULATORY INFORMATION (Continued from Page 5)

COMPONENTS: Copper Sulfate

Section 311 & 312 (40 CFR 370):

Hazard Categories (product): **Fire: N Sudden Release of Pressure: N Reactive: N Acute Health: Y Chronic Health: N**
Planning threshold: 10,000 pounds

Section 313 (40 CFR 372):

Listed Toxic Chemical: Yes (Copper Category)
Reporting Threshold: 10,000 pounds

U.S. TSCA Status

Listed (40 CFR 710): Yes

State Regulations

State of California: Safe Drinking Water and Toxins Enforcement Act, 1986 (Proposition 65):

Carcinogen: No
Reproductive Toxin: No

Other Regulations

State Right To Know Laws: MA, NJ, PA

Canadian Regulations

Product Information:

Controlled Product: **Yes**
WHMIS Hazard Symbols: **Material Causing Other Toxic Effects**
WHMIS Class & Division: **D.2B**

Ingredient Information:

IDL Substance: Yes
DSL or NDSL Lists: DSL

SECTION 16: OTHER INFORMATION

EPA Registration number: Not applicable

Approved Product Uses: Used as a part of a plant nutrition program.

Special Notes:

This product is not manufactured, or formulated to contain substances, which the State of California has found to cause cancer and/or birth defects or other reproductive harm. However, as containing mined minerals, this product may contain trace (parts per million) or ultra-trace (parts per billion) of elements known to the State of California to cause cancer, birth defects or other reproductive harm.

Special Instructions:

When making dilutions, always add Copper to water with adequate mixing to ensure a uniform solution.

Do not add this product to hypochlorite bleaches, chlorine sanitizers, or chlorinated cleaners as this can liberate toxic, corrosive Chlorine gas.

SDS Revision Information: Revised Date: 9/03/2020

SDS Distributed by: Bio Huma Netics, Inc.

Prepared By: Frank S. Pidgeon, Sr. EHSS Director

Date Prepared: October 20, 2014

This Safety Data Sheet is provided as an information resource only. It should not be taken as a warranty or representation for which Bio Huma Netics, Inc. assumes legal liability. While Bio Huma Netics, Inc. believes the information contained herein is accurate and compiled from sources believed to be reliable, it is the responsibility of the user to investigate and verify its validity. The buyer assumes all responsibility of using and handling the product in accordance with applicable federal, state, and local regulations.