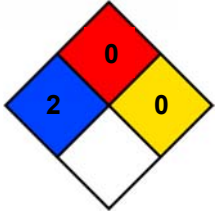




# SAFETY DATA SHEET

## HUMA GRO® Copper



| HMIS            |   |
|-----------------|---|
| HEALTH          | 2 |
| FLAMMABILITY    | 0 |
| PHYSICAL HAZARD | 0 |
| PPE             | B |

### SECTION 1: CHEMICAL PRODUCT & COMPANY IDENTIFICATION

|                              |   |   |
|------------------------------|---|---|
| <b>PRODUCT</b>               | <b>HUMA GRO® Copper</b>   | <b>Product #040</b>   |
| <b>GENERAL USE:</b>          | Used as a part of a plant nutrition program and in the production of plant nutrient products. |   |
| <b>PRODUCT DESCRIPTION:</b>  | A clear to slightly hazy, royal blue liquid having a very slight characteristic odor.         |   |
| <b>SUPPLIER INFORMATION:</b> | Bio Huma Netics, Inc.<br>1331 W Houston Avenue<br>Gilbert, AZ 85233                           | <b>EMERGENCY PHONE NUMBERS</b>                                      |
| For Additional SDS call:     | PHONE: (480) 961-1220   | CHEMTREC: (In the USA) 800-424-9300<br>(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 <sub>(TWA)</sub>                         | STEL | PEL <sub>(TWA)</sub> | STEL |
| Copper Sulfate* | 7758-98-7 | Strong Eye Irritant; Skin & Respiratory Irritant; Blood, Liver & Kidney toxin | 13.5 ± 1 | 1 mg/m <sup>3</sup><br>(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

|                            |  |
|----------------------------|--|
| <b>INHALATION:</b>         | 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. |
| <b>EYE CONTACT:</b>        | 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.   |
| <b>SKIN CONTACT:</b>       | 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.   |
| <b>INGESTION:</b>          | If swallowed, get medical attention immediately. Induce vomiting immediately, as directed by medical personnel. Never give anything by mouth to an unconscious person.   |
| <b>NOTE TO PHYSICIANS:</b> | 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

|   |   |                |                              |
|---|---|----------------|------------------------------|
| <b>Flashpoint and Method:</b>                 | This product does not flash.  |                |                              |
| <b>Flammable Limits (in air, % by volume)</b> | <b>Lower:</b>   | Not applicable | <b>Upper:</b> Not applicable |
| <b>Autoignition Temperature:</b>              | Not applicable  |                |                              |
| <b>GENERAL HAZARD:</b>                        | This product is a non-combustible, inorganic, acidic, aqueous solution. The Uniform Fire Code health hazard classification for this product is: <b>Irritant</b> . It may produce hazardous mists or hazardous decomposition products. |                |                              |
| <b>FIRE FIGHTING INSTRUCTIONS:</b>            | <b>EXTINGUISHING MEDIA:</b> Water fog or spray, foam, CO <sub>2</sub> and dry chemicals.<br>Use a water fog or spray to cool the containers exposed to the heat of a fire.  |                |                              |
| <b>FIRE FIGHTING EQUIPMENT:</b>               | Fire fighters should wear full protective equipment, including self-contained breathing apparatus.  |                |                              |
| <b>HAZARDOUS COMBUSTION PRODUCTS:</b>         | 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

|                          |  |
|--------------------------|--|
| <b>RELEASE TO LAND:</b>  | 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. |
| <b>RELEASE TO WATER:</b> | 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

|                             |   |                          |         |
|-----------------------------|---|--------------------------|---------|
| <b>STORAGE TEMPERATURE:</b> | Ambient   | <b>STORAGE PRESSURE:</b> | Ambient |
| <b>GENERAL:</b>             | 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

|                                 |                                    |  |                   |
|---------------------------------|------------------------------------|--|-------------------|
| <b>Appearance:</b>              | Clear to slightly hazy, royal blue | <b>Bulk Density (pounds/ft<sup>3</sup>):</b> | Not applicable    |
| <b>Physical State:</b>          | Liquid                             | <b>Vapor Pressure:</b>                       | No data available |
| <b>Odor:</b>                    | Very slight, characteristic        | <b>Vapor Density (air=1):</b>                | No data available |
| <b>Odor Threshold:</b>          | No data available                  | <b>Evaporation Rate (n-Butyl Acetate=1):</b> | Less than 1       |
| <b>Molecular Formula:</b>       | Mixture                            | <b>VOC Content / Organic Matter:</b>         | Nil / 0.17%       |
| <b>Molecular Weight:</b>        | Not applicable                     | <b>% Volatile:</b>                           | Approximately 85  |
| <b>Boiling Point:</b>           | Greater than 100° C. (212° F.)     | <b>Solubility in H<sub>2</sub>O:</b>         | Complete          |
| <b>Freezing/Melting Point:</b>  | Less than 0° C. (32° F.)           | <b>Octanol/Water Partition Coefficient:</b>  | No data available |
| <b>Specific Gravity:</b>        | 1.10 – 1.25 @ 20° C.               | <b>pH (as is):</b>                           | 1.5 - 3.5         |
| <b>Density (pounds/gallon):</b> | Approximately 9.77                 | <b>pH (1% solution):</b>                     | 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

|   |  |
|---|--|
| <b>Components:</b>                                | <b>Copper Sulfate</b>  |
| <b>Eye Contact:</b>                               | No data available  |
| <b>Skin Contact:</b>                              | No data available  |
| <b>Oral Rat LD<sub>50</sub>:</b>                  | 300 mg/kg  |
| <b>Dermal Rabbit LD<sub>50</sub>:</b>             | No data available (Dermal Rat Subcutaneous LD <sub>50</sub> : 43 mg/kg)  |
| <b>Inhalation Rat LC<sub>50</sub>:</b>            | No data available  |
| <b>Human Data:</b>                                | Oral Human TD <sub>L0</sub> : 11 mg/kg; Toxic Effects: Gastrointestinal – Gastritis, Hypermotility, diarrhea, nausea or vomiting |
| <b>Other Toxicological Data:</b>                  | Oral Child TD <sub>L0</sub> : 150 mg/kg; Toxic Effects: Kidney, Ureter and Bladder – Changes in tubules (acute renal failure)    |
| <b>Carcinogenicity:</b>                           | Parenteral Chicken TD <sub>L0</sub> : 10 mg/kg; Equivocal tumorigenic agent by RTECS criteria; Endocrine – Tumors                |
| <b>Teratogenicity:</b>                            | Intratesticular Rat TD <sub>L0</sub> : 3,192 ug/kg (male 1 Day prior to mating); Paternal Effects – Spermatogenesis, epididymis  |
| <b>Mutagenicity:</b>                              | Rat DNA Damage; Ascites tumor: 500 umol/Liter; (Rat DNA Damage; liver: 1 mmol/Liter)   |
| <b>Synergistic Products:</b>                      | None reported  |
| <b>Target Organs:</b>                             | Eyes, Skin, Mucous membranes, Lungs, Liver, Kidneys & Blood  |
| <b>Medical Conditions Aggravated By Exposure:</b> | 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 (CuSO<sub>4</sub>)      **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:**

|                              |                |
|------------------------------|----------------|
| <b>Regulated by OSHA:</b>    | No             |
| <b>Listed on NTP Report:</b> | No             |
| <b>Listed by IARC:</b>       | No             |
| IARC Group:                  | Not applicable |
| <b>ACGIH Appendix A:</b>     | 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 (040) 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: 11/15/17

**SDS Distributed by:** Bio Huma Netics, Inc.

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

**Date Prepared:** October 20, 2014

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