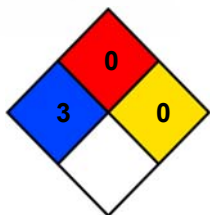




SAFETY DATA SHEET

HUMA GRO® Turf Micro®



HMIS	
HEALTH	3
FLAMMABILITY	0
PHYSICAL HAZARD	0
PPE	D

SECTION 1: CHEMICAL PRODUCT & COMPANY IDENTIFICATION

PRODUCT IDENTIFIER: HUMA GRO® Turf Micro®**Product#** 210**GENERAL USE:** Used as a part of a plant nutrition program.**PRODUCT DESCRIPTION:** A clear to hazy, light green liquid having a unique characteristic odor.**SUPPLIER INFORMATION:** Bio Huma Netics, Inc.
1331 W Houston Avenue
Gilbert, AZ 85233For Additional SDS call: **PHONE: (480) 961-1220****EMERGENCY PHONE NUMBERS****CHEMTREC:** (In the USA) 800-424-9300
(International) 703-527-3887

SECTION 2: HAZARDS IDENTIFICATION

**HAZARDS
OVERVIEW:**

A clear to hazy, acidic, light green liquid having a unique characteristic odor. Exposure to this product's mists or liquid can cause severe irritation or burns to the eyes and may cause severe irritation, or possibly burns to the skin and respiratory tract, on prolonged exposure. **The NIOSH I. D. L. H. for Phosphoric Acid is: 1,000 mg/m³.**

CLASSIFICATION: SKIN CORROSION – CATEGORY 1A**SIGNAL WORD:** DANGER**HAZARD STATEMENT:** H314; causes severe skin burns and eye damage**PRECAUTIONARY STATEMENT:** P260; Do not breathe dusts/mist/vapors. P280; Wear protective gloves/protective clothing/eye protection/face protection P264; Wash hands thoroughly after handling**CLASSIFICATION:** HAZARD CATEGORY 5 - MAY BE HARMFUL IF SWALLOWED**SIGNAL WORD:** WARNING**HAZARD STATEMENT:** H303 - WARNING – may be harmful if swallowed**PRECAUTIONARY STATEMENT:** P312; Call a poison center/doctor/physician if you feel unwell

SECTION 3: COMPOSITION & INFORMATION ON INGREDIENTS

<u>COMPONENT</u>	<u>CAS #</u>	<u>OSHA HAZARD</u>	<u>WT %</u>	<u>ACGIH</u>		<u>OSHA</u>	
				<u>TLV_(TWA)</u>	<u>STEL</u>	<u>PEL_(TWA)</u>	<u>STEL</u>
Monoammonium Phosphate	7722-76-1	Eye, Skin & Respiratory Irritant	6 ± 2	None	None	None	None
Phosphoric Acid	7664-38-2	Corrosive; Lung Toxin	3 ± 2	1 mg/m ³	3 mg/m ³	1 mg/m ³	None

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 immediately.
SKIN CONTACT:	In case of contact, immediately flush skin with plenty of clean running water for at least 15 minutes, while removing contaminated clothing and shoes. If burn or irritation occurs, call a physician.
INGESTION:	If swallowed DO NOT induce vomiting. Get medical attention immediately. If victim is fully conscious, give plenty of water to drink. Never give anything by mouth to an unconscious person.
NOTE TO PHYSICIANS:	Phosphoric Acid solutions have a low oral toxicity, but they can be severely irritating and/or corrosive to the eyes, skin and mucous membranes. If ingested, consideration should be given to careful endoscopy as stomach or esophageal burns, perforations or strictures 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 an aqueous solution of inorganic salts and natural plant oils that are in a low concentration Phosphoric Acid solution. The Uniform Fire Code health hazard classification for this product is: Corrosive (Acidic) . This product may produce hazardous mists or hazardous decomposition products.		
FIRE FIGHTING INSTRUCTIONS:	EXTINGUISHING MEDIA: Water, foam, CO ₂ or dry chemicals. Use a water spray or fog 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 Ammonia gas and chloride compounds with toxic potassium, nitrogen, tin, sulfur, zinc, manganese, copper and carbon oxides, plus trace or ultra-trace toxic oxide amounts, of iron, magnesium, calcium and sodium, along with dense, irritating smoke.		

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 commercially absorbent material. 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 or sewer, 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. Do not get this product in eyes, on skin or on clothing. Wear recommended personnel protective equipment when handling this product. Do not breathe mists, vapors, fumes or aerosols. Use only 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, OSHA-PEL or levels that may cause irritation..

RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT

- RESPIRATOR:** For exposure above the ACGIH-TLV, OSHA-PEL 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.
For exposures to Phosphoric Acid greater than 25 mg/m³, a supplied air respirator operated in the continuous flow mode is recommended by NIOSH.
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 hazy, light green	Bulk Density (pounds/ft³):	Not applicable
Physical State:	Liquid	Vapor Pressure:	No data available
Odor:	Unique, characteristic	Vapor Density (air=1):	No data available
Odor Threshold:	No data available	Evaporation Rate (n-Butyl Acetate=1):	Less than 1
Molecular Formula:	Mixture	VOC Content / Organic Matter:	Approx. 37gm/liter / 3.44%
Molecular Weight:	Not applicable	% Volatile:	Approximately 85
Boiling Point:	Greater than 100° C. (212° F.)	Solubility in H₂O:	Soluble
Freezing/Melting Point:	Less than 0° C. (32° F.)	Octanol/Water Partition Coefficient:	No data available
Specific Gravity:	1.00 – 1.15 @ 20° C.	pH (as is):	1.0 - 2.0
Density (pounds/gallon):	Approximately 8.68	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:** Strong oxidizers, caustics & strong alkali, cyanides, sulfides, sulfites, chlorine releasers, Aluminum, Magnesium, Zinc and alloys of these metals.
- HAZARDOUS DECOMPOSITION PRODUCTS:** When heated to dryness and decomposition, it emits toxic Ammonia gas and chloride compounds with toxic potassium, nitrogen, tin, sulfur, zinc, manganese, copper and carbon oxides, plus trace or ultra-trace toxic oxide amounts, of iron, magnesium, calcium and sodium, along with dense, irritating smoke.
- 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:	<u>Monoammonium Phosphate</u>	<u>Phosphoric Acid</u>
Eye Contact:	No data available	Rabbit: 119 mg; Severe
Skin Contact:	No data available	Rabbit: 595 mg/24 hours; Severe
Oral Rat LD ₅₀ :	5,750 mg/kg	1,530 mg/kg
Dermal Rabbit LD ₅₀ :	Greater than 7,940 mg/kg	2,740 mg/kg
Inhalation Rat LC ₅₀ :	No data available	Greater than 850 mg/m ³ /1 hour
Human Data:	No data available	Unreported Route Man LD _{Lo} : 220 mg/kg
Other Toxicological Data:	No data available	Oral Man TD _{Lo} : 1,286 uL/kg
Carcinogenicity:	No data available	No data available
Teratogenicity:	No data available	No data available
Mutagenicity:	No data available	No data available
Synergistic Products:	None reported	None reported
Target Organs:	Eyes, Skin, Lungs & Central Nervous System	Eyes, Skin, Mucous membranes, Lungs & Gastrointestinal tract
Medical Conditions Aggravated By Exposure:	Skin or Respiratory disorders	Skin, Respiratory or Gastrointestinal disorders

SECTION 12: ECOLOGICAL INFORMATION

ENVIRONMENTAL FATE:

This product is heavier than water, soluble in water and will affect the pH of the water. Inorganic phosphates, in contact with soil, sub-surface or surface waters, may be taken up by plants and utilized as essential nutrients. Phosphates may also form precipitates, usually with Calcium or Magnesium. The resultant compounds are insoluble, becoming part of the soil.

ENVIRONMENTAL CONSIDERATIONS:

The aquatic toxicity for this product is related to the pH of the water. For Rainbow trout, the reported LC₅₀ is about a pH of 4.0 for a 7 day bioassay. Other species may vary a bit from this pH level, but all are susceptible to acidic pH conditions.

SECTION 13: DISPOSAL CONSIDERATIONS

RCRA 40 CFR 261 CLASSIFICATON: RCRA Corrosive Waste

U.S. EPA WASTE NUMBER/DESCRIPTION: D002

If this product is disposed of as shipped, it meets the criteria of a hazardous waste as defined under 40 CFR 261 due to its corrosivity. If this product becomes a waste, it will be a hazardous waste, which is subject to the Land Disposal Restrictions under 40 CFR 268 and must be managed accordingly. As a hazardous liquid waste, it must be disposed of in accordance with local, state, and federal regulations in a permitted hazardous waste treatment, storage, and disposal facility.

SECTION 14: TRANSPORTATION INFORMATION

DOT PROPER SHIPPING NAME:	Phosphoric acid, solution		
	Hazard Class: 8	UN Number: UN1805	Packing Group: III
	Primary Label: Corrosive	Subsidiary Label(s): None Required	
	Primary/Subsidiary Placards: Corrosive		
DOT Reportable Quantity (RQ):	5,000 pounds (H ₃ PO ₄)	RQ for Product:	166,667 pounds (18,842 gallons)
Marine Pollutant:	No		
2012 North American Emergency Response Guidebook No.:	154		

TDG PROPER SHIPPING NAME:	Phosphoric acid, solution		
	Hazard Class: 8	UN Number: UN1805	Packing Group: III
	Primary Label: Corrosive	Subsidiary Label(s): None Required	
	Primary/Subsidiary Placards: Corrosive		
TDG Reportable Quantity (RQ): *	At least 5kg or 5 liters		
TDG Schedule XII:	Not listed		
Regulated Limit (RL): **	230 kg (H ₃ PO ₄)	RL for Product:	7,666.7 kg (7,232.7 liters)
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:	<u>Monoammonium Phosphate</u>	<u>Phosphoric Acid</u>
<u>OSHA Target Organs:</u>	Eyes, Skin, Lungs & Central Nervous System	Eyes, Skin, Mucous membranes, Lungs & Gastrointestinal tract
<u>Carcinogenic Potential:</u>		
Regulated by OSHA:	No	No
Listed on NTP Report:	No	No
Listed by IARC:	No	No
IARC Group:	Not applicable	Not applicable
ACGIH Appendix A:	Not listed	Not listed
A1 Confirmed Human:	Not applicable	Not applicable
A2 Suspected Human:	Not applicable	Not applicable

U.S. EPA Requirements

Release Reporting

CERCLA (40 CFR 302)

Listed Substance:	Not listed	Yes
Reportable Quantity:	Not applicable	5,000 pounds
Category:	Not applicable	D
RCRA Waste No.:	Not applicable	Not listed
Unlisted Substance:	Not applicable	Not applicable
Reportable Quantity:	Not applicable	Not applicable
Characteristic:	Not applicable	Not applicable
RCRA Waste No.:	Not applicable	Not applicable

SECTION 15: REGULATORY INFORMATION (Continued from page 5)

COMPONENTS: Monoammonium Phosphate Phosphoric Acid

SARA TITLE III**Section 302 & 303 (40 CFR 355):**

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

Section 311 & 312 (40 CFR 370):

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

Section 313 (40 CFR 372):

Listed Toxic Chemical:	Yes (Aqua Ammonia)	No (Delisted in 2000)
Reporting Threshold:	10,000 pounds	Not applicable

U.S. TSCA Status

Listed (40 CFR 710):	Yes	Yes
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State Regulations**State of California: Safe Drinking Water and Toxins Enforcement Act, 1986 (Proposition 65):**

Carcinogen:	No	No
Reproductive Toxin:	No	No

Other Regulations

State Right To Know Laws: MA, NJ, PA

Canadian Regulations**Product Information:**

Controlled Product:	Yes
WHMIS Hazard Symbols:	Corrosive Material
WHMIS Class & Division:	E

Ingredient Information:

IDL Substance:	No	Yes
DSL or NDSL Lists:	DSL	DSL

SECTION 16: OTHER INFORMATION

EPA Registration number: Not applicable

Approved Product Uses: Used as 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 it contains 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 solutions, always add Turf Micro™ to water or other solutions with adequate mixing to ensure a uniform solution. Do not add this product to hypochlorite bleaches, chlorine sanitizers or chlorinated cleaners as this liberates toxic, corrosive Chlorine gas. Do not add this product to strong alkali or caustics as this will release a large amount of heat and toxic Ammonia gas.

SDS Revision Information: Revised Date: 11/15/17

SDS Distributed by: Bio Huma Netics

Prepared By:	Frank S. Pidgeon, Sr. EHSS Director	Date Prepared:	October 21, 2014
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