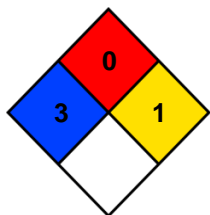




SAFETY DATA SHEET

HUMA GRO® C-Phos



HMIS	
HEALTH	3
FLAMMABILITY	0
PHYSICAL HAZARD	0
PPE	E

SECTION 1: CHEMICAL PRODUCT & COMPANY IDENTIFICATION

PRODUCT IDENTIFIER:	HUMA GRO® C-Phos	Product# 035
GENERAL USE:	Used as a part of a plant nutrition program.	
PRODUCT DESCRIPTION:	A clear to slightly hazy, greenish gold liquid having a unique, characteristic odor.	
SUPPLIER INFORMATION:	Bio Huma Netics 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, greenish gold, strongly acidic liquid having a unique, characteristic odor. The vapors, mists and liquid may cause severe irritation or burns to all tissues contacted. This product may generate flammable Hydrogen gas on contact with most metals. **The NIOSH I.D.L.H. for Phosphoric Acid is: 1,000 mg/m³; for Nitric Acid it is: 25 ppm**

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

SECTION 3: COMPOSITION & INFORMATION ON INGREDIENTS

COMPONENT	CAS #	OSHA HAZARD	WT %	ACGIH		OSHA	
				TLV _(TWA)	STEL	PEL _(TWA)	STEL
Phosphoric Acid	7664-38-2	Corrosive; Lung Toxin	28 ± 3	1 mg/m ³	3 mg/m ³	1 mg/m ³	None
Calcium Nitrate	10124-37-5	Oxidizer; Eye, Skin & Respiratory Irritant; Toxic by Ingestion	19 ± 3	None	None	None	None
Monoammonium Phosphate	7722-76-1	Eye, Skin & Respiratory Irritant; Central Nervous System toxin	8 ± 2	None	None	None	None
Nitric Acid	7697-37-2	Corrosive; Eye, Skin & Respiratory Hazard; Lung toxin; Toxic by Ingestion	2 ± 1	2 ppm	4 ppm	2 ppm	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:	While Phosphoric Acid, Calcium Nitrate and Nitric Acid solutions have a moderate oral toxicity, they are 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 not combustible, but it will generate flammable / explosive Hydrogen gas on contact with many metals. The Uniform Fire Code physical hazard classification for this product is: Oxidizer, Class 1 ; the health hazard classification is: Corrosive (Acidic) . Dilute solutions of this product may also be corrosive. It 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 with toxic phosphorus oxides, nitrogen oxides and calcium oxide with trace toxic oxide amounts of potassium, sulfur, iron, zinc, manganese, magnesium, 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 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 OSHA-PEL, ACGIH-TLV or levels that may cause irritation.

RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT

RESPIRATOR: For exposure above the ACGIH-TLV or OSHA-PEL, for Phosphoric Acid 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 above the OSHA-PEL or ACGIH-TLV, for Nitric Acid, up to 25 ppm:** wear a full facepiece supplied air respirator operated in the continuous flow mode. **For exposures greater than an I.D.L.H., emergency situations or entry into unknown concentrations:** wear a full facepiece self-contained breathing apparatus (SCBA) operated in the positive pressure mode; or wear a full facepiece supplied air respirator operated in the positive pressure mode, equipped with an auxiliary positive pressure SCBA. (See section 16 for additional respirator information.) **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 4H, Saranex, Barricade, Neoprene or Butyl 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 or Butyl Rubber apron or full protective suit. 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 or Butyl Rubber boots, or Natural Rubber boots with 4H inserts. **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, greenish gold	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:	Not applicable
Molecular Weight:	Not applicable	% Volatile:	Approximately 42
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:	Approximately 1.48 @ 20° C.	pH (as is):	Less than 1.0
Density (pounds/gallon):	Approximately 12.35	pH (1% solution):	Less than 2.5

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: Contact with most metals (e.g. mild steel, Aluminum, Magnesium, Zinc & Copper), alloys of these metals, caustics & alkali, sulfides, sulfites, cyanides and chlorine releasers.

HAZARDOUS DECOMPOSITION PRODUCTS: When heated to dryness and decomposition, it emits toxic Ammonia gas with toxic oxides of phosphorus, nitrogen and calcium, with trace toxic oxide amounts of potassium, sulfur, iron, zinc, manganese, magnesium, 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:	<u>Phosphoric Acid</u>	<u>Calcium Nitrate</u>
Eye Contact:	Rabbit: 119 mg; Severe	No data available
Skin Contact:	Rabbit: 595 mg/24 hours; Severe	No data available
Oral Rat LD ₅₀ :	1,530 mg/kg	302 mg/kg
Dermal Rabbit LD ₅₀ :	2,740 mg/kg	No data available
Inhalation Rat LC ₅₀ :	Greater than 850 mg/m ³ /1 hour	No data available
Human Data:	Unreported Route Man LD _{Lo} : 220 mg/kg	No data available
Other Toxicological Data:	Oral Man TD _{Lo} : 1,286 uL/kg	No data available
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, Mucous membranes, Lungs & Gastrointestinal tract	Eyes, Skin, Lungs, & Gastrointestinal tract
Medical Conditions Aggravated By Exposure:	Skin, Respiratory or Gastrointestinal disorders	Skin, Respiratory or Gastrointestinal disorders
Components:	<u>Monoammonium Phosphate</u>	<u>Nitric Acid</u>
Eye Contact:	No data available	No data available
Skin Contact:	No data available	No data available
Oral Rat LD ₅₀ :	5,750 mg/kg	No data available
Dermal Rabbit LD ₅₀ :	Greater than 7,940 mg/kg	No data available
Inhalation Rat LC ₅₀ :	No data available	No data available
Human Data:	No data available	Oral Human LD _{Lo} : 430 mg/kg
Other Toxicological Data:	No data available	Unreported Route Man LD _{Lo} : 110 mg/kg
Carcinogenicity:	No data available	No data available
Teratogenicity:	No data available	Oral Rat TD _{Lo} : 21,150 mg/kg; Duration: (female 1-21 Days Pregnant) Effects on Embryo or Fetus - Fetotoxicity
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 & Teeth
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, completely 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 CLASSIFICATION: 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: Corrosive liquid, acidic, inorganic, n.o.s. (Contains Phosphoric Acid, Nitric Acid)
Hazard Class: 8 **UN Number:** UN3264 **Packing Group:** II
Primary Label: Corrosive **Subsidiary Label(s):** None
Primary/Subsidiary Placards: Corrosive

DOT Reportable Quantity (RQ): 5,000 pounds (H₃PO₄) **RQ for Product:** 17,705 pounds (1,434 gallons)

Marine Pollutant: No

2012 North American Emergency Response Guidebook No.: 154

TDG PROPER SHIPPING NAME: Corrosive liquid, acidic, inorganic, n.o.s. (Contains Phosphoric Acid, Nitric Acid)
Hazard Class: 8 **UN Number:** UN3264 **Packing Group:** II
Primary Label: Corrosive **Subsidiary Label(s):** None
Primary/Subsidiary Placards: Corrosive

TDG Reportable Quantity (RQ): * At least 5kg or 5 liters

TDG Schedule XII: Not listed

Regulated Limit (RL): ** 230kg (H₃PO₄) **RL for Product:** 814.4 kg (550.3 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>Phosphoric Acid</u>	<u>Calcium Nitrate</u>	<u>Monoammonium Phosphate</u>	<u>Nitric Acid</u>
<u>OSHA Target Organs:</u>	Eyes, Skin, Mucous membranes, Lungs & Gastrointestinal tract	Eyes, Skin, Lungs, & Gastrointestinal tract	Eyes, Skin, Lungs & Central Nervous System	Eyes, Skin, Mucous membranes, Lungs, Gastrointestinal tract & Teeth
<u>Carcinogenic Potential:</u>				
Regulated by OSHA:	No	No	No	No
Listed on NTP Report:	No	No	No	No
Listed by IARC:	No	No	No	No
IARC Group:	Not applicable	Not applicable	Not applicable	Not applicable
ACGIH Appendix A:	Not listed	Not listed	Not listed	Not listed
A1 Confirmed Human:	Not applicable	Not applicable	Not applicable	Not applicable
A2 Suspected Human:	Not applicable	Not applicable	Not applicable	Not applicable

U.S. EPA Requirements

Release Reporting

CERCLA (40 CFR 302)

Listed Substance:	Yes	Not listed	Not listed	Yes
Reportable Quantity:	5,000 pounds	Not applicable	Not applicable	1,000 pounds
Category:	D	Not applicable	Not applicable	C
RCRA Waste No.:	Not listed	Not applicable	Not applicable	None listed
Unlisted Substance:	Not applicable	Yes	Not applicable	Not applicable
Reportable Quantity:	Not applicable	100 pounds	Not applicable	Not applicable
Characteristic:	Not applicable	Ignitability	Not applicable	Not applicable
RCRA Waste No.:	Not applicable	D001	Not applicable	Not applicable

SECTION 15: REGULATORY INFORMATION (Continued from Page 5)

COMPONENTS:

Phosphoric Acid

Calcium Nitrate

Monoammonium Phosphate

Nitric Acid

SARA TITLE III

Section 302 & 303 (40 CFR 355):

Listed Substance:

Reportable Quantity:

Planning Threshold:

Section 311 & 312 (40 CFR 370):

Hazard Categories (product):

Planning threshold:

Section 313 (40 CFR 372):

Listed Toxic Chemical:

Reporting Threshold:

U.S. TSCA Status

Listed (40 CFR 710):

State Regulations

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

Carcinogen:

Reproductive Toxin:

Other Regulations

State Right To Know Laws:

Canadian Regulations

Product Information:

Controlled Product:

WHMIS Hazard Symbols:

WHMIS Class & Division:

Ingredient Information:

IDL Substance:

DSL or NDSL Lists:

Yes

Corrosive Material

E

Yes

No

No

No

Yes

1,000 pounds

1,000 pounds

10,000 pounds

10,000 pounds

10,000 pounds

10,000 pounds

Yes

Yes

Yes

Yes

No

No

MA, NJ, PA,CA

Yes

No

No

Yes

DSL

DSL

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 formulated to contain any material, which the State of California has found to cause cancer and/or birth defects or other reproductive harm. However, as it contains very small amounts of 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.

Additional Respirator Information:

The NIOSH/OSHA respirator recommendations for Nitric Acid exposures in air (published in the NIOSH POCKET GUIDE TO CHEMICAL HAZARDS, June 1994, pages 224-225) list: "a full-facepiece chemical cartridge respirator with cartridge(s) to protect against nitric acid" as being acceptable for exposures to Nitric Acid up to 25 ppm. It came to the attention of Bio Huma Netics that manufacturers of chemical cartridge respirators do not list any cartridges as being capable of protection against Nitric Acid. Therefore, the recommended respiratory protection on this Bio Huma Netics product MSDS does not list cartridge respirators, but does list full-facepiece supplied air respirators or a full-facepiece SCBA.

The NIOSH/OSHA respirator recommendations for Nitric Acid exposures in air (published in the NIOSH POCKET GUIDE TO CHEMICAL HAZARDS, June 1997, January 2003, pages 224-225 and September 2005, page 225) now list a full-facepiece supplied air respirator, operated in the controlled flow mode, as being acceptable for exposures to Nitric Acid up to 25 ppm. For exposures greater than 25 ppm, emergency situations or entry into unknown concentrations, the recommendation is to wear a full facepiece self-contained breathing apparatus (SCBA) operated in the positive pressure mode; or wear a full facepiece supplied air respirator operated in the positive pressure mode, equipped with an auxiliary positive pressure SCBA.

Special Instructions:

When making solutions, add this product to water, or other solutions, with adequate mixing to ensure a uniform solution.

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

Do not add this product to strong alkali or caustic materials and products, as this can liberate heat and toxic Ammonia gas.

SDS Revision Information: Revised Date: 4/16/13

SDS Distributed by: Bio Huma Netics

Prepared By:	Frank S. Pidgeon, EHS Director	Date Prepared:	April 16, 2013
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