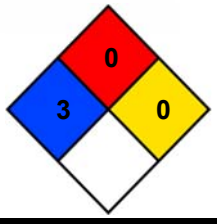
SAFETY DATA SHEET
Probiotic Solutions® Super Phos



HMIS	
HEALTH	3
FLAMMABILITY	0
PHYSICAL HAZARD	0
PPE	D

SECTION 1: CHEMICAL PRODUCT & COMPANY IDENTIFICATION

PRODUCT IDENTIFIER:	**Probiotic Solutions® Super Phos**	**Product# 105**
GENERAL USE:	Used as an ultra-efficient phosphorous source.	
PRODUCT DESCRIPTION:	A clear, light greenish amber liquid having no characteristic odor.	

SUPPLIER INFORMATION:
Bio Huma Netics, Inc.
1331 W Houston Avenue
Gilbert, AZ 85233

For 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:

Clear, light greenish amber, strongly acidic liquid having no characteristic odor. The vapors, mists and liquid may cause severe irritation or burns to all tissues contacted. Phosphoric Acid may generate flammable Hydrogen gas on contact with most metals. **The NIOSH I.D.L.H. for Phosphoric Acid is: 1,000 mg/m^3.**

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

				ACGIH		OSHA	
COMPONENT	**CAS #**	**OSHA HAZARD**	**WT %**	**TLV$_{(TWA)}$**	**STEL**	**PEL$_{(TWA)}$**	**STEL**
Phosphoric Acid	7664-38-2	Corrosive; Lung Toxin	90 ± 5	1 mg/m^3	3 mg/m^3	1 mg/m^3	None
Proprietary Component		Eye, Skin & Respiratory Irritant; Central Nervous System toxin	5 ± 1	None	None	None	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 not combustible, but it will generate flammable / explosive Hydrogen gas on contact with many metals. The Uniform Fire Code health hazard classification for this product 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, and trace toxic oxide amounts of potassium, nitrogen, sulfur, iron, zinc, manganese, magnesium, 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 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 or OSHA-PEL.

RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT

RESPIRATOR: For exposure above the ACGIH-TLV or OSHA-PEL, 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/m^3, a supplied air respirator operated in the continuous flow mode is recommended. For exposures to Phosphoric Acid greater than 50 mg/m^3, a full facepiece respirator with a high-efficiency particulate filter, a full facepiece supplied air respirator or a full facepiece self-contained breathing apparatus (SCBA) is recommended. For exposures to Phosphoric Acid above 1,000 mg/m^3, a full facepiece (SCBA), operated in the positive pressure and pressure demand 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, Natural Rubber, or Viton 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, light amber	**Bulk Density (pounds/ft^3):**	Not applicable
Physical State:	Liquid	**Vapor Pressure:**	No data available
Odor:	No 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:**	Nil / 0.51%
Molecular Weight:	Not applicable	**% Volatile:**	No data available
Boiling Point:	Greater than 100° C. (212° F.)	**Solubility in H_2O:**	Complete
Freezing Point:	Less than -34.5° C. (-30° F.)	**Octanol/Water Partition Coefficient:**	No data available
Specific Gravity:	1.40 – 1.60 @ 20° C.	**pH (as is):**	≤1.00
Density (pounds/gallon):	Approximately 12.44	**pH (1% solution):**	Less than 3.0

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 -30° F (-34.5° 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 and 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, and trace toxic oxide amounts of potassium, nitrogen, sulfur, iron, zinc, manganese, magnesium, 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:	**Phosphoric Acid**	**Proprietary Component**
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	5,750 mg/kg
Dermal Rabbit LD_{50}:	2,740 mg/kg	Greater than 7,940 mg/kg
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 & Central Nervous System
Medical Conditions Aggravated By Exposure:	Skin, Respiratory or Gastrointestinal disorders	Skin or Respiratory 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 LC_{50} is about a pH of 4.0 for a 7 day bioassay. Other species may vary a bit from this pH level, but all susceptible to acidic pH conditions.

SECTION 13: DISPOSAL CONSIDERATIONS

RCRA 40 CFR 261 CLASSIFICATON: RCRA Corrosive Waste (United States)

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_3PO_4) **RQ for Product:** 9,091 pounds (717 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_3PO_4) **RL for Product:** 418.2 kg (275.1 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:	**Phosphoric Acid**	**Proprietary Component**
OSHA Target Organs:	Eyes, Skin, Mucous membranes, Lungs & Gastrointestinal tract	Eyes, Skin, Lungs & Central Nervous System
Carcinogenic Potential:		
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:	Yes	Not listed
Reportable Quantity:	5,000 pounds	Not applicable
Category:	D	Not applicable
RCRA Waste No.:	Not listed	Not applicable
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:	**Phosphoric Acid**	**Proprietary Component**

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: N** **Sudden Release of Pressure: N** **Reactive: N** **Acute Health: Y** **Chronic Health: N**

Planning threshold:	10,000 pounds	10,000 pounds

Section 313 (40 CFR 372):

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

U.S. TSCA Status

Listed (40 CFR 710):	Yes	Yes

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:	Yes	No
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 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.

Special Instructions: When making solutions, always add this product 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 caustic materials and products as this can liberate a large amount of heat and toxic Ammonia gas.

MSDS Revision Information: Revision Date: 9/24/18

MSDS Distributed by: Bio Huma Netics, Inc.

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