



SAFETY DATA SHEET

Probiotic Solutions® Bio Energizer®

Rev I 9/03/2020

HMIS	
HEALTH	2
FLAMMABILITY	0
PHYSICAL HAZARD	0
PPE	A

SECTION 1: CHEMICAL PRODUCT & COMPANY IDENTIFICATION

PRODUCT IDENTIFIER: Probiotic Solutions® Bio Energizer®	Product # 350
GENERAL USE: Used to balance microbial ecosystems for bioremediation of water and soil for increased bio-oxidation	
PRODUCT DESCRIPTION: A clear to hazy, brownish purple liquid having a slight characteristic odor.	
INFORMATION PROVIDED BY: Bio Huma Netics, Inc. 1331 W Houston Avenue Gilbert, AZ 85233	EMERGENCY PHONE NUMBERS
For additional SDS's 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 hazy, brownish purple, slightly alkaline liquid having a slight characteristic odor. The liquid and mists may be irritating to the eyes and skin. Inhalation of mists may be irritating to the entire respiratory tract. Ingestion of this product may cause gastrointestinal irritation, cardiovascular and central nervous system effects.

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

COMPONENT	CAS #	OSHA HAZARD	WT %	ACGIH		OSHA	
				TLV _(TWA)	STEL	PEL _(TWA)	STEL
Ammonium Nitrate	6484-52-2	Oxidizer; Eye, Skin & Respiratory Irritant; Blood toxin	37 ± 3	None	None	None	None
Urea	57-13-6	Eye Irritant; Slight to Moderate Skin & Respiratory Irritant; Slightly Toxic by Chronic Dermal Contact & Inhalation, with Cardiovascular & Central Nervous System effects.	29 ± 2	None	None	None	None
Cobalt Chloride	7646-79-9	Eye, Skin & Respiratory Irritant; Toxic by Ingestion; Possible Human Carcinogen - IARC	0.13 ± 0.02	0.02 mg/m ³ (as Co) (A3)	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, preferably mouth-to-mouth. 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 if irritation persists.
- 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 large quantities of this product are swallowed, call a physician immediately. DO NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.
- NOTE TO PHYSICIANS:** Based on component information, this product is slightly toxic by ingestion. If a large amount is ingested, consideration should be given to careful endoscopy as stomach or esophageal irritation may occur, with possible central nervous system effects following absorption into the blood stream. 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:** No data available **Upper:** No data available
- Autoignition Temperature:** Not determined
- GENERAL HAZARD:** This product is an aqueous, slightly alkaline solution of organic and inorganic compounds with small amounts of mineral salts. The Uniform Fire Code health hazard classification for this product is: **Irritant**. It may produce hazardous decomposition products.
- FIRE FIGHTING INSTRUCTIONS:** **EXTINGUISHING MEDIA:** Water fog, foam, CO₂ or 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 Ammonia gas, chloride compounds, carbon dioxide, carbon monoxide, and nitrogen oxides with trace or ultra-trace toxic oxide amounts of iron, sulfur, manganese, magnesium, potassium, calcium, phosphorus, zinc, cobalt, boron, and sodium.

SECTION 6: ACCIDENTAL RELEASE MEASURES

- RELEASE TO LAND:** Wearing recommended protective equipment and clothing, dike the spill and pick up the bulk of the liquid using pumps or vacuum truck for disposal in accordance with Federal, State and local regulations. Absorb the remaining liquid using sand, or commercially absorbent material; dispose as Federal, State and local requirements dictate. Flush the spill area with water; collect the rinsates for disposal as the regulations require.
- Note: This product contains Ammonium Nitrate, an oxidizing fertilizer. Do not allow this concentrated product to dry in contact with combustible organic materials or reducing agents as a reaction may occur, releasing heat and possibly toxic gasses.
- 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. Protect eyes, skin and clothing from contact with product. Wear recommended personal protective equipment when handling this product. Avoid breathing vapors or mists. 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, above the ACGIH-TLV, AIHA WEEL or levels that may cause irritation.

RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT

RESPIRATOR: Respiratory protection is not normally required. If use creates mists or aerosols, or if an ACGIH-TLV is exceeded, a NIOSH approved full facepiece or half mask air-purifying cartridge respirator equipped with an organic vapor cartridge and a dust / mist pre-filter or supplied air is required. **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 Butyl Rubber, Neoprene 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 Butyl Rubber, Neoprene or Natural Rubber apron 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 Butyl Rubber, Neoprene 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, brownish purple	Bulk Density (pounds/ft³):	Not applicable
Physical State:	Liquid	Vapor Pressure:	No data available
Odor:	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 / 11.5%
Molecular Weight:	Not applicable	% Volatile:	No data available
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:	1.20 – 1.35 @ 20° C.	pH (as is):	5.0 – 6.0
Density (pounds/gallon):	Approximately 10.43	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: Oxidizers, reducing agents, caustics & strong alkali and readily oxidized materials.

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

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 (additional toxicological information in section 16)

Components:	<u>Ammonium Nitrate</u>	<u>Urea</u>
Eye Contact:	No data available	No data available
Skin Contact:	No data available	No data available
Oral Rat LD₅₀:	2,217 mg/kg	8,471 mg/kg
Dermal Rabbit LD₅₀:	No data available	No data available (Rabbit, Subcutaneous LD ₅₀ : 3 gm/kg)
Inhalation Rat LC₅₀:	No data available	No data available (Rat, Inhalation, Chronic – Multiple Dose, 288 mg/m ³ /17 weeks; Toxic effects: Kidney, Ureter & Bladder – Other changes in urine composition; Blood – Other changes; Nutritional and gross metabolic changes.)
Human Data:	No data available	Dermal Human Standard Draize Test: 22 mg/3 days; Mild
Other Toxicological Data:	No data available	Rat, Dermal, Chronic – Multiple Dose, 3,024 mg/kg/4 weeks; Toxic effects: Liver – Changes in Liver weight; Endocrine – Changes in Thymus weight; Death.
Carcinogenicity:	No data available	Oral Rat TD _{Lo} : 821 gm/kg/1 year; Tumorigenic – Neoplastic by RTECS criteria; Blood – Tumors; Blood – Lymphomax including Hodgkin's disease.
Teratogenicity:	No data available	Intraplaccental Woman TD _{Lo} : 1,400 mg/kg (female 16 Weeks pregnant); Effects on Fertility - Abortion
Mutagenicity:	No data available	Human DNA Inhibition; lymphocyte: 600 mmol/Liter
Synergistic Products:	None reported	None reported
Target Organs:	Eyes, Skin, Mucous membranes, Lungs & Blood	Eyes, Skin, Mucous membranes, Lungs, Cardiovascular & Central Nervous Systems
Medical Conditions Aggravated By Exposure:	Skin or Respiratory disorders	Skin, Respiratory, or Cardiac disorders

Components:	<u>Cobalt Chloride</u>
Eye Contact:	No data available
Skin Contact:	No data available
Oral Rat LD₅₀:	80 mg/kg
Dermal Rabbit LD₅₀:	No data available (Subcutaneous Rabbit LD ₅₀ : 200 mg/kg)
Inhalation Rat LC₅₀:	No data available
Human Data:	Oral Child TD _{Lo} : 48 mg/kg; Toxic Effects; Behavioral – Anorexia (human); Endocrine – Thyroid (goiter)
Other Toxicological Data:	Dermal Rat LD _{Lo} : 2 gm/kg; Toxic Effects: Nutritional and gross metabolic – Weight loss or decreased weight gain
Carcinogenicity:	Subcutaneous Rat TD _{Lo} : 400 mg/kg/19 Days – I; Toxic Effects: Tumorigenic – Carcinogenic by RTECS criteria; Tumors at site of application
Teratogenicity:	Oral Rat TD _{Lo} : 11 mg/kg (female 1-22 Days pregnant); Effects on Fertility – Post-implantation mortality
Mutagenicity:	Human DNA Inhibition, HeLa cell: 1 mmol/Liter
Synergistic Products:	None reported
Target Organs:	Eyes, Skin, Mucous membranes, & Lungs
Medical Conditions Aggravated By Exposure:	Skin or Respiratory disorders

SECTION 12: ECOLOGICAL INFORMATION

ENVIRONMENTAL FATE:

This product is completely soluble in water and is not expected to affect the pH of water. No specific environmental fate data is available, but the organic portion of this product is expected to be biodegradable.

ENVIRONMENTAL CONSIDERATIONS:

The aquatic toxicity for this product has not been determined.

SECTION 13: DISPOSAL CONSIDERATIONS

RCRA 40 CFR 261 CLASSIFICATION: Non-RCRA Hazardous Waste (United States)

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-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: NOT DOT REGULATED (UNITED STATES)

Hazard Class: Not applicable **UN Number:** Not applicable **Packing Group:** Not applicable
Primary Label: None Required **Subsidiary Label(s):** None Required
Primary/Subsidiary Placards: None Required

DOT Reportable Quantity (RQ): Not listed **RQ for Product:** Not applicable

Marine Pollutant: No

2012 North American Emergency Response Guidebook No.: Not applicable

TDG PROPER SHIPPING NAME: NOT RESTRICTED

Hazard Class: Not applicable **UN Number:** Not applicable **Packing Group:** Not applicable
Primary Label: None Required **Subsidiary Label(s):** None Required
Primary/Subsidiary Placards: None Required

TDG Reportable Quantity (RQ): # Not applicable

TDG Schedule XII: Not listed

Regulated Limit (RL): ## Not listed **RL for Product:** Not applicable

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:

Ammonium Nitrate

Urea

Cobalt Chloride

OSHA Target Organs:

Eyes, Skin, Mucous membranes, Lungs & Blood

Eyes, Skin, Mucous membranes, Lungs, Cardiovascular & Central Nervous Systems

Eyes, Skin, Mucous membranes & Lungs

Carcinogenic Potential:

Regulated by OSHA:

No

No

No

Listed on NTP Report:

No

No

No

Listed by IARC:

No

No

Yes

IARC Group:

Not applicable

Not applicable

Group 2B

ACGIH Appendix A:

Not listed

Not listed

Yes (A3)

A1 Confirmed Human:

Not applicable

Not applicable

Not applicable

A2 Suspected Human:

Not applicable

Not applicable

Not applicable

SECTION 15: REGULATORY INFORMATION (Continued from Page 5)

COMPONENTS:	<u>Ammonium Nitrate</u>	<u>Urea</u>	<u>Cobalt Chloride</u>
<u>U.S. EPA Requirements</u>			
Release Reporting			
CERCLA (40 CFR 302)			
Listed Substance:	Not listed	Not listed	Not listed
Reportable Quantity:	Not applicable	Not applicable	Not applicable
Category:	Not applicable	Not applicable	Not applicable
RCRA Waste No.:	Not applicable	Not applicable	Not applicable
Unlisted Substance:	Not applicable	Not applicable	Not applicable
Reportable Quantity:	Not applicable	Not applicable	Not applicable
Characteristic:	Not applicable	Not applicable	Not applicable
RCRA Waste No.:	Not applicable	Not applicable	Not applicable
<u>SARA TITLE III</u>			
Section 302 & 303 (40 CFR 355):			
Listed Substance:	Not listed	Not listed	Not listed
Reportable Quantity:	Not applicable	Not applicable	Not applicable
Planning Threshold:	Not applicable	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>Y</u>
Planning threshold:	10,000 pounds	10,000 pounds	10,000 pounds
Section 313 (40 CFR 372):			
Listed Toxic Chemical:	Yes (Aqua Ammonia & Nitrate compounds)	Not listed	Yes (Cobalt compounds)
Reporting Threshold:	10,000 pounds	Not applicable	10,000 pounds
<u>U.S. TSCA Status</u>			
Listed (40 CFR 710):	Yes	Yes	Yes
<u>State Regulations</u>			
State of California: Safe Drinking Water and Toxins Enforcement Act, 1986 (Proposition 65):			
Carcinogen:	No	No	No
Reproductive Toxin:	No	No	No
<u>Other Regulations</u>			
State Right To Know Laws:	NJ		
<u>Canadian Regulations</u>			
Product Information:			
Controlled Product:	Yes		
WHMIS Hazard Symbols:	Material Causing Other Toxic Effects		
WHMIS Class & Division:	D.2A; D.2B		
Ingredient Information:			
IDL Substance:	No	No	Yes
DSL or NDSL Lists:	DSL	DSL	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 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:

Store Bio Energizer® in a cool, dry, well ventilated, area away from incompatible materials and products. When making dilutions, always add this product to water, or aqueous solutions, with adequate mixing to ensure a uniform solution. Do not add strong alkali or caustics to this product, as that will liberate toxic Ammonia gas.

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

SDS Distributed by: Bio Huma Netics, Inc.

Prepared By: Andrew Emerson, Project Engineer
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Date Prepared: December 9, 2019
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