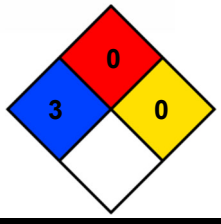
SAFETY DATA SHEET
HUMA GRO® Sil-K®

Rev G 9/08/2020

HMIS	
HEALTH	3
FLAMMABILITY	0
PHYSICAL HAZARD	0
PPE	E



SECTION 1: CHEMICAL PRODUCT & COMPANY IDENTIFICATION

PRODUCT	**HUMA GRO® Sil-K®**	**Product# 390**
GENERAL USE:	Used as a part of a plant nutrition program.	
PRODUCT DESCRIPTION:	A clear to slightly hazy amber liquid having a slight 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:

A clear to slightly hazy amber liquid having a slight characteristic odor. The liquid and mists may be severely irritating to the eyes. The liquid and mists may cause irritation to the skin and respiratory tract. This product may be slightly corrosive to Aluminum, Magnesium, Lead, Tin and Zinc.

CLASSIFICATION: CAUSES SKIN IRRITATION – HAZARD CATEGORY 2

SIGNAL WORD: WARNING

HAZARD STATEMENT: H315 - WARNING - causes skin irritation

PRECAUTIONARY STATEMENTS: P264; wash hands thoroughly after handling. P280; wear protective gloves as identified in section #8. P302+P352; IF ON SKIN: Wash with plenty of soap and water. P321; Specific treatment, see section #4. P332+P313; If skin irritation occurs: Get medical attention/advice. P362; Take off contaminated clothing and wash before reuse.

SECTION 3: COMPOSITION & INFORMATION ON INGREDIENTS

				ACGIH		OSHA	
COMPONENT	**CAS #**	**OSHA HAZARD**	**WT %**	**$TLV_{(TWA)}$**	**STEL**	**$PEL_{(TWA)}$**	**STEL**
Potassium Hydroxide	1310-58-3	Corrosive; Toxic by Ingestion	15 ± 2	None Ceiling: 2 mg/m^3	None	None	None
Silicic Acid, Sodium Salt	1344-09-8	Eye, skin and respiratory irritant	2 ± 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 medical 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.

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: Potassium Hydroxide solutions are corrosive to the eyes, skin and mucous membranes and are moderately toxic by ingestion. 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 a non-combustible, inorganic, aqueous solution. The Uniform Fire Code health hazard classification for this product is: **Corrosive (Alkaline).** Diluted solutions of this product may also be corrosive and may generate flammable / explosive Hydrogen gas on contact with some soft metals (such as Aluminum). It may produce hazardous mists or hazardous decomposition products.

FIRE FIGHTING INSTRUCTIONS: **EXTINGUISHING MEDIA:** Water, foam, CO_2 or dry chemicals.
Use the extinguishing media appropriate for the surrounding fire. 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 potassium oxide and sodium oxide plus trace toxic oxide amounts of phosphorus, nitrogen, sulfur, iron, zinc, manganese, magnesium, calcium 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 alkalinity, of the remaining liquid, using a dilute acid solution appropriate for neutralizing alkaline liquids. Liberally cover the spill area with sodium bicarbonate. 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 personal protective equipment when handling this product. Do not breathe mists. Use only with adequate ventilation. Do not take internally. Keep the containers tightly closed when not in use. Wash thoroughly after handling this product. **Note**: This product can be corrosive to Tin, Aluminum, Magnesium, Zinc and alloys containing these metals, and may react vigorously with these metals in powder form. Always add this product, with constant stirring, slowly to the surface of cool to lukewarm (50 – 80□ F.) water.

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 OSHA-PEL or ACGIH Ceiling level, or if use generates mists or aerosols, 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 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 Nitrile, Butyl Rubber 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 Nitrile, Butyl Rubber or Natural Rubber boots when cleaning up a spill or if contact is likely. **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 amber	**Bulk Density (pounds/ft^3):**	Not applicable
Physical State:	Liquid	**Vapor Pressure:**	No data available
Odor:	Slight characteristic odor	**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:**	Nil / 0.05%
Molecular Weight:	Not applicable	**% Volatile:**	Approximately 81
Boiling Point:	Greater than 100° C. (212° F.)	**Solubility in H_2O:**	Complete
Freezing/Melting Point:	Less than 0° C. (32° F.)	**Octanol/Water Partition Coefficient:**	No data available
Specific Gravity:	1.20 – 1.40 @ 20° C.	**pH (as is):**	≥14.0
Density (pounds/gallon):	Approximately 10.77	**pH (1% solution):**	Greater than 12.0

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 50° F (10° C) or above 90° F (30° C)

INCOMPATIBLE MATERIAL: Acids and acidic salts, organic materials containing nitrogen, organic peroxides, organic compounds containing halogens, Aluminum, Magnesium, Zinc, Tin and alloys of these metals.

HAZARDOUS DECOMPOSITION PRODUCTS: When heated to dryness and decomposition, it emits toxic oxides of potassium and sodium with trace toxic oxide amounts of phosphorus, nitrogen, sulfur, iron, zinc, manganese, magnesium, calcium 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:	**Potassium Hydroxide**	**Silicic Acid, Sodium Salt**
Eye Contact:	Rabbit: 1 mg/24 hours, rinsed; Moderate	Rabbit: 10mg/24 hours; Severe
Skin Contact:	Rabbit: 50 mg/24 hours; Severe	Rabbit: 500mg/24 hours; Severe
Oral Rat LD_{50}:	273 mg/kg	1,960 mg/kg
Dermal Rabbit LD_{50}:	Greater than 2 gm/kg	Greater than 4,640 mg/kg
Inhalation Rat LC_{50}:	No data available	No data available
Human Data:	Dermal Human: 50 mg/24 hours; Severe	No data available
Other Toxicological Data:	No data available	No data available
Carcinogenicity:	No data available	No data available
Teratogenicity:	No data available	No data available
Mutagenicity:	Hamster Cytogenetic Analysis; ovary: 12 mmol/Liter	No data available
Synergistic Products:	None reported	None reported
Target Organs:	Eyes, Skin, Mucous membranes, Lungs & Gastrointestinal tract	Eyes, skin, mucous membranes and lungs
Medical Conditions Aggravated By Exposure:	Skin, Respiratory or Cardiovascular disorders	Skin or respiratory disorders

SECTION 12: ECOLOGICAL INFORMATION

ENVIRONMENTAL FATE:

This product is completely soluble in water. No specific environmental fate information is available. This product can significantly affect the pH of water.

ENVIRONMENTAL CONSIDERATIONS:

Aquatic toxicity rating for Potassium Hydroxide: 2 (TLM96: 100 to 10 ppm). TLM96 for Mosquito fish (Gambusia affinis) = 80 ppm. Lethal Dose (24 hour exposure): Trout = 50 ppm. Bluegills = 56 ppm. Minnows (Lepomis pallidus) = 28 ppm.

SECTION 13: DISPOSAL CONSIDERATIONS

RCRA 40 CFR 261 CLASSIFICATON: Corrosive

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 by treatment.

SECTION 14: TRANSPORTATION INFORMATION

DOT PROPER SHIPPING NAME: **Potassium hydroxide, solution**

Hazard Class: 8 **UN Number:** UN1814 **Packing Group:** II

Primary Label: Corrosive **Subsidiary Label(s):** None

Primary/Subsidiary Placards: Corrosive

DOT Reportable Quantity (RQ): 1,000 pounds (KOH) **RQ for Product:** Approximately 6,667 pounds (626 gallons)

Marine Pollutant: No

2012 North American Emergency Response Guidebook No.: **154**

TDG PROPER SHIPPING NAME: **POTASSIUM HYDROXIDE, SOLUTION**

Hazard Class: 8 **UN Number:** UN1814 **Packing Group:** II

Primary Label: Corrosive **Subsidiary Label(s):** None Required

Primary/Subsidiary Placards: Corrosive

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

TDG Schedule XII: Not listed

Regulated Limit (RL): ** 50 kg (KOH) **RL for Product:** Approximately 333.3 kg (261.2 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:	**Potassium Hydroxide**	**Silicic Acid, Sodium Salt**
OSHA Target Organs:	Eyes, Skin, Mucous membranes, Lungs & Gastrointestinal tract	Eyes, Skin, mucous membranes and lungs
Carcinogenic Potential:		
Regulated by OSHA:	No	No
Listed on NTP Report:	No	No
Listed by IARC:	No	No
IARC Group:	Not applicable	2B
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:	1,000 pounds	Not applicable
Category:	C	Not applicable
RCRA Waste No.:	None 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:	**Potassium Hydroxide**	**Silicic Acid, Sodium Salt**

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:	Not listed	Not listed
Reporting Threshold:	Not applicable	Not applicable

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, CA	None known

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 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 SIL-K® in a cool, dry, well-ventilated area, away from incompatible materials and products. Do not allow SILK to contact Aluminum, Magnesium, Zinc, Tin or their alloys as this can generate flammable / explosive Hydrogen gas and severely corrode these metals.

SDS Revision Information: Revised Date: 9/08/2020

SDS Distributed by: Bio Huma Netics, Inc.

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