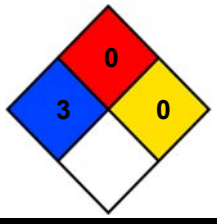
SAFETY DATA SHEET
HUMA GRO® Sulfur®



HMIS	
HEALTH	3
FLAMMABILITY	0
PHYSICAL HAZARD	0
PPE	D

SECTION 1: CHEMICAL PRODUCT & COMPANY IDENTIFICATION

PRODUCT IDENTIFIER:	**HUMA GRO® Sulfur®**	**Product# 150**
GENERAL USE:	Used as a part of a plant nutrition program.	
PRODUCT DESCRIPTION:	A clear to slightly hazy, light tan liquid having a unique 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, light tan, acidic liquid having a unique characteristic odor. The liquid and mists may cause severe irritation, or burns, to the eyes and skin. Inhalation of mists may be severely irritating, or corrosive, to the entire respiratory tract. Ingestion of this product may cause severe gastrointestinal irritation and central nervous system effects.

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**
Ammonium Sulfate	7783-20-2	Eye, Skin & Respiratory Irritant; Human Central Nervous System Effects by Ingestion	30 ± 5	None	None	None	None
Ammonium Hydrogen Sulfate	7803-63-6	Corrosive; Moderately toxic by Ingestion	6 ± 2	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 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: Ammonium Hydrogen Sulfate with Ammonium Sulfate solutions has a moderate oral toxicity, but they also 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 may generate flammable/explosive Hydrogen gas on contact with some metals, such as Aluminum. The Uniform Fire Code health hazard classification for this product is: **Corrosive (Acidic).** 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, nitrogen oxides and sulfur oxides with trace or ultra-trace toxic oxide amounts of potassium, phosphorus, iron, manganese, magnesium, calcium, zinc 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 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 sodium bicarbonate, limestone, or other agent appropriate for neutralizing acidic liquids, that will not release Ammonia gas. 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 levels that may cause irritation.

RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT

RESPIRATOR: For exposure to those levels that may cause irritation, wear a NIOSH-approved full facepiece or half mask air-purifying cartridge respirator equipped with a good mist / particulate 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 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 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 slightly hazy, light tan	**Bulk Density (pounds/ft^3):**	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:**	Nil / 0.60%
Molecular Weight:	Not applicable	**% Volatile:**	Approximately 62
Boiling Point:	Greater than 100° C. (212° F.)	**Solubility in H_2O:**	Soluble
Freezing/Melting Point:	Less than 0° C. (32° F.)	**Octanol/Water Partition Coefficient:**	No data available
Specific Gravity:	1.20 – 1.30 @ 20° C.	**pH (as is):**	1.0 - 1.5
Density (pounds/gallon):	Approximately 10.35	**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, 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, with toxic oxides of nitrogen and sulfur plus trace or ultra-trace toxic oxide amounts of potassium, phosphorus, iron, manganese, magnesium, calcium, 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

Components:	**Ammonium Sulfate**	**Ammonium Hydrogen Sulfate**
Eye Contact:	No data available	No data available
Skin Contact:	No data available	No data available
Oral Rat LD_{50}:	2,840 mg/kg	No data available
Dermal Rabbit LD_{50}:	No data available	No data available
Inhalation Rat LC_{50}:	No data available	No data available
Human Data:	Oral Man TD_{Lo}: 1,500 mg/kg (Gastrointestinal effects)	No data available
Other Toxicological Data:	Intraperitoneal Mouse LD_{50}: 610 mg/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 & Central Nervous System	Eyes, Skin, Mucous membranes, Lungs & Central Nervous System
Medical Conditions Aggravated By Exposure:	Skin or Respiratory disorders	Skin or Respiratory disorders

SECTION 12: ECOLOGICAL INFORMATION

ENVIRONMENTAL FATE:

This product is soluble in water and may significantly affect the pH of water. No specific environmental fate data is available.

ENVIRONMENTAL CONSIDERATIONS:

The aquatic toxicity for this product has not been determined.

SECTION 13: DISPOSAL CONSIDERATIONS

RCRA 40 CFR 261 CLASSIFICATON: 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-RCRA 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: **Ammonium hydrogen sulfate, solution**

Hazard Class: 8 **UN Number:** UN2506 **Packing Group:** II

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

Primary/Subsidiary Placards: Corrosive

DOT Reportable Quantity (RQ): Not Listed **RQ for Product:** Not Applicable

Marine Pollutant: No

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

TDG PROPER SHIPPING NAME: **Ammonium hydrogen sulfate, solution**

Hazard Class: 8 **UN Number:** UN2506 **Packing Group:** II

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): ** 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 Sulfate**	**Ammonium Hydrogen Sulfate**
OSHA Target Organs:	Eyes, Skin, Mucous membranes, Lungs & Central Nervous System	Eyes, Skin, Mucous membranes, 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:	Not listed	Not listed
Reportable Quantity:	Not applicable	Not applicable
Category:	Not applicable	Not applicable
RCRA Waste No.:	Not applicable	Not applicable
Unlisted Substance:	Not applicable	Yes
Reportable Quantity:	Not applicable	100 pounds
Characteristic:	Not applicable	Corrosivity
RCRA Waste No.:	Not applicable	Not listed

SECTION 15: REGULATORY INFORMATION (Continued from page 5)

COMPONENTS:	Ammonium Sulfate	Ammonium Hydrogen Sulfate

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:	Yes (Aqua Ammonia)	Yes (Aqua Ammonia)
Reporting Threshold:	10,000 pounds	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: None Known

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: Store Sulfur® in a cool, dry, well ventilated, area away from incompatible materials and products. Do not add this product to strong alkali or caustic materials, as this can generate a lot of heat and it can liberate toxic, corrosive Ammonia gas. Do not add this product to hypochlorite bleaches, chlorine sanitizers or chlorinated cleaners as this can liberate toxic, corrosive Chlorine gas and/or chloramines.

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

SDS Distributed by: Bio Huma Netics, Inc.

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