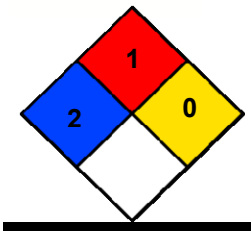
SAFETY DATA SHEET
HUMA GRO® Boron

Rev J 9-3-2020



HMIS	
HEALTH	2
FLAMMABILITY	1
PHYSICAL HAZARD	0
PPE	C

SECTION 1: CHEMICAL PRODUCT & COMPANY IDENTIFICATION

PRODUCT IDENTIFIER: **HUMA GRO® Boron** | **Product # 020**

GENERAL USE: Used as a part of a plant nutrition program.

PRODUCT DESCRIPTION: A slightly hazy, light amber liquid having a unique, characteristic odor.

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

For 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 slightly hazy, light amber, almost neutral liquid having a unique, characteristic odor. The liquid and mists may cause moderate to severe eye irritation and may cause moderate skin irritation. Inhalation of vapors or mists may cause irritation to the entire respiratory tract. Ingestion may cause irritation to the entire gastrointestinal tract.

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 TLV$_{(TWA)}$	ACGIH STEL	OSHA PEL$_{(TWA)}$	OSHA STEL
Boric Acid	10043-35-3	Eye, Skin & Respiratory Irritant; Toxic by Ingestion; Kidney, Gastrointestinal & Central Nervous Systems toxin	32 ± 5	2 mg/m^3 Inhalable Fraction	6 mg/m^3 Inhalable Fraction	None	None
Triethanolamine	102-71-6	Eye, Skin, Respiratory Irritant; Possible Liver & Kidney toxin	21 ± 5	5 mg/m^3	None	None	None
Diethanolamine	111-42-2	Severe Eye Irritant; Mild Skin, Respiratory Irritant; Moderately Toxic by Ingestion	3.0 ± 0.5	1 mg/m^3 (Skin, A3) Inhalable Fraction & Vapor	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.

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: The hazards associated with this product are mainly due to the toxicity of the Boric Acid and its irritant properties to eyes, skin and mucous membranes. If a large amount of this product is swallowed, careful gastric lavage with an endotracheal tube in place should be considered. Treat exposure symptomatically.

SECTION 5: FIRE FIGHTING MEASURES

Flashpoint and Method: Greater than 100° C. (212° F.) Pensky-Martins Closed Tester (ASTM D 93)

Flammable Limits (in air, % by volume) **Lower:** No data available **Upper:** No data available

Autoignition Temperature: Not determined

GENERAL HAZARD: This product is not a combustible liquid under OSHA or WHMIS regulations. This product may be ignited at elevated temperatures and can burn after the water has evaporated. The Uniform Fire Code health hazard classification for this product is: **Irritant.** This product may produce hazardous vapors or hazardous decomposition products.

FIRE FIGHTING INSTRUCTIONS: **EXTINGUISHING MEDIA:** Water fog, foam, CO_2 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 carbon monoxide, carbon dioxide, nitrogen oxides and boron oxide, with trace or ultra-trace toxic oxide amounts, of phosphorus, potassium, sulfur, iron, zinc, manganese, magnesium, calcium 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 commercial absorbent; dispose as Federal, State and local requirements dictate. Flush the spill area with water; collect the rinsates for disposal as the regulations require.

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 this product. Wear recommended personnel protective equipment. Avoid breathing vapors, mists or aerosols. Use with adequate ventilation. Keep the containers tightly closed when not in use. Wash thoroughly after handling this product. The empty containers may be hazardous. They may contain organic residues that can be ignited and will burn. Do not cut, puncture or weld on or near these containers.

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 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:	A slightly hazy, light amber	**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):**	No data available
Molecular Formula:	Mixture	**VOC Content / Organic Matter:**	No data available 5.0%
Molecular Weight:	Not applicable	**% Volatile:**	No data available
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:	1.10 – 1.25 @ 20° C.	**pH (as is):**	6.5 to 7.5
Density (pounds/gallon):	Approximately 9.18	**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: Store in a cool dry place, do not store in direct sunlight.

INCOMPATIBLE MATERIAL: Strong oxidizers, caustics and acids. It may react with nitrites to create nitrosamines, which may cause cancer.

HAZARDOUS DECOMPOSITION PRODUCTS: When heated to dryness and decomposition, it emits toxic oxides of carbon nitrogen and boron, with trace or ultra-trace toxic oxide amounts, of phosphorus, potassium, sulfur, iron, zinc, manganese, magnesium, calcium 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:	**Boric Acid**	**Triethanolamine**
Eye Contact:	No data available	Rabbit: 20 mg; Severe
Skin Contact:	Human Standard Draize Test: 15 mg/3 Days ; Mild	Rabbit: 560 mg/24 hours; Mild
Oral Rat LD_{50}:	2,660 mg/kg	8 gm/kg
Dermal Rabbit LD_{50}:	No data available (Dermal Infant TD_{Lo}: 1,200 mg/kg)	Greater than 20 mL/kg
Inhalation Rat LC_{50}:	28 mg/m^3/4 hours	No data available
Human Data:	Oral Woman LD_{Lo}: 200 mg/kg	Skin Contact Human: 15 mg/3 days; Mild
Other Toxicological Data:	Oral Child TD_{Lo}: 500 mg/kg; Gastrointestinal Effects: Nausea or vomiting	Oral Guinea Pig LD_{50}: 5,300 mg/kg
Carcinogenicity:	No data available	Oral Mouse TD_{Lo}: 16 gm/kg/64 weeks
Teratogenicity:	Oral Rat TD_{Lo}: 6,600 mg/kg (female 1 – 21 Days pregnant); Effects on Embryo or Fetus – Fetotoxicity; Specific Developmental Abnormalities – Musculoskeletal system	No data available
Mutagenicity:	Bacteria – E Coli Mutations in Microorganisms: 17,000 ppm/24 hours (-S9)	Human Cytogenetic Analysis – lymphocyte: 100 umol/Liter
Synergistic Products:	None reported	None reported
Target Organs:	Eyes, Skin, Lungs, Kidneys, Gastrointestinal & Central Nervous Systems	Eyes, Skin, Lungs, Liver & Kidneys
Medical Conditions Aggravated By Exposure:	Skin, Respiratory, Kidney or Gastrointestinal disorders	Skin, Respiratory, Liver or Kidney 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 CLASSIFICATON: Non-Hazardous Waste

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:	**Boric Acid**	**Triethanolamine**	**Diethanolamine**
OSHA Target Organs:	Eyes, Skin, Lungs, Kidneys, Gastrointestinal & Central Nervous Systems	Eyes, Skin, Lungs, Liver & Kidneys	Eyes, Skin, Mucous membranes, Lungs & Gastrointestinal tract
Carcinogenic Potential:			
Regulated by OSHA:	No	No	No
Listed on NTP Report:	No	Reference 11	References 10 and 16
Listed by IARC:	No	No	No
IARC Group:	Not applicable	Not applicable	Not applicable
ACGIH Appendix A:	Not listed	Not listed	Not listed
A1 Confirmed Human:	Not applicable	Not applicable	Not applicable
A2 Suspected Human:	Not applicable	Not applicable	Not applicable
U.S. EPA Requirements			
Release Reporting			
CERCLA (40 CFR 302)			
Listed Substance:	Not listed	Not listed	Yes
Reportable Quantity:	Not applicable	Not applicable	100 pounds
Category:	Not applicable	Not applicable	B
RCRA Waste No.:	Not applicable	Not applicable	None listed
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

SECTION 15: REGULATORY INFORMATION (Continued from Page 4)

COMPONENTS:	**Boric Acid**	**Triethanolamine**	**Diethanolamine**
SARA TITLE III			
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: N**	**Sudden Release of Pressure: N**	**Reactive: N** **Acute Health: Y** **Chronic Health: N**
Planning threshold:	10,000 pounds	10,000 pounds	10,000 pounds
Section 313 (40 CFR 372):			
Listed Toxic Chemical:	Not listed	Not listed	Yes
Reporting Threshold:	Not applicable	Not applicable	10,000 pounds
U.S. TSCA Status			
Listed (40 CFR 710):	Yes	Yes	Yes
State Regulations			
State of California: Safe Drinking Water and Toxins Enforcement Act, 1986 (Proposition 65):			
Carcinogen:	No	No	No
Reproductive Toxin:	No	No	No
Other Regulations			
State Right To Know Laws:	MA, NJ, PA		

Canadian Regulations

Product Information:	
Controlled Product:	**Yes**
WHMIS Hazard Symbols:	**Material Causing Other Toxic Effects**
WHMIS Class & Division:	**D.2B**

Ingredient Information:			
IDL Substance:	Yes	Yes	Yes
DSL or NDSL Lists:	DSL	DSL	DSL

SECTION 16: OTHER INFORMATION

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.

Additional Toxicological Information: The National Toxicology Program has conducted subchronic toxicity studies with Diethanolamine in rats and mice, which suggest that the kidneys, liver and blood are potential target systems for Diethanolamine toxicity, following both oral and dermal exposures. Effects in the brain and spinal cord of rats, and in the hearts of mice were observed only at extremely high dosages of Diethanolamine.

Most of the effects, reported in these studies, were observed in only one of the species tested, and clear dose response trends were not always evident in treated groups, making the relevance of these findings, across species, questionable. NTP has initiated chronic studies in rats and mice by the dermal route of exposure. These studies may clarify the results of the subchronic studies as well as provide information on the potential carcinogenicity of Diethanolamine. Prolonged and repeated ingestion of Triethanolamine has caused kidney damage in laboratory animals.

Special Instructions:

Do not add nitrites to Boron. Amines can combine with nitrites or other nitrosating agents to form nitrosamines. Many nitrosamines have been found to cause cancer in laboratory animals. Store this product in a cool, dry, ventilated area away from incompatible materials and products.

SDS Revision Information: Revised Date: 9/3/2020

SDS Distributed by: Bio Huma Netics, Inc.

Prepared By:	Frank S. Pidgeon, Sr. EHSS Director	**Date Prepared:**	October 20, 2014