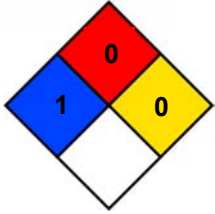




# SAFETY DATA SHEET

## HUMA GRO® Molybdenum



HMIS	
HEALTH	1
FLAMMABILITY	0
PHYSICAL HAZARD	0
PPE	A

### SECTION 1: CHEMICAL PRODUCT & COMPANY IDENTIFICATION

<b>PRODUCT IDENTIFIER:</b> HUMA GRO® Molybdenum	<b>Product #</b> 310
<b>GENERAL USE:</b> Used as a part of a plant nutrition program.	
<b>PRODUCT DESCRIPTION:</b> A clear to hazy, light tan liquid having no characteristic odor.	
<b>SUPPLIER INFORMATION:</b> Bio Huma Netics, Inc. 1331 W Houston Avenue Gilbert, AZ 85233	<b>EMERGENCY PHONE NUMBERS</b>
<b>For Additional SDS call:</b> PHONE: (480) 961-1220	<b>CHEMTREC:</b> (In the USA) 800-424-9300 (International) 703-527-3887

### SECTION 2: HAZARDS IDENTIFICATION

<b>HAZARDS OVERVIEW:</b>	A clear to hazy, slightly too moderately alkaline, light tan liquid having no characteristic odor. The liquid and mists may moderately irritate the eyes and possibly the skin on prolonged exposure. Inhalation of mists may irritate the entire respiratory tract, including the lungs.
<b>CLASSIFICATION:</b>	HAZARD CATEGORY 3 - MILD SKIN IRRITATION
<b>SIGNAL WORD:</b>	WARNING
<b>HAZARD STATEMENT:</b>	H316 - WARNING - causes mild skin irritation
<b>PRECAUTIONARY STATEMENT:</b>	P332+P313; If skin irritation occurs: Get medical attention/advice.
<b>CLASSIFICATION:</b>	HAZARD CATEGORY 5 - MAY BE HARMFUL IF SWALLOWED
<b>SIGNAL WORD:</b>	WARNING
<b>HAZARD STATEMENT:</b>	H303 - WARNING – may be harmful if swallowed
<b>PRECAUTIONARY STATEMENT:</b>	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 <sub>(TWA)</sub>	STEL	PEL <sub>(TWA)</sub>	STEL
Disodium Molybdate Dihydrate	10102-40-6	Moderate Eye Irritant; Slight Skin & Respiratory Irritant; May be Toxic by Ingestion or Inhalation	11 ± 2	0.5 mg/m <sup>3</sup> (as Mo) Respirable Fraction (A3)	None	5 mg/m <sup>3</sup> (as Mo)	None
				NDA = No Data Available		N/A = Not Applicable	

#### SECTION 4: FIRST AID MEASURES

<b>INHALATION:</b>	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.
<b>EYE CONTACT:</b>	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.
<b>SKIN CONTACT:</b>	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.
<b>INGESTION:</b>	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.
<b>NOTE TO PHYSICIANS:</b>	Sodium Molybdate, Dihydrate solutions have a relatively low oral toxicity but may be irritating to the eyes, skin and mucous membranes. If ingested consideration should be given to careful endoscopy as stomach or esophageal irritation may occur. Careful gastric lavage with an endotracheal tube in place should be considered. Treat exposure symptomatically.

#### SECTION 5: FIRE FIGHTING MEASURES

<b>Flashpoint and Method:</b>	This product does not flash.		
<b>Flammable Limits (in air, % by volume)</b>	<b>Lower:</b>	Not applicable	<b>Upper:</b> Not applicable
<b>Autoignition Temperature:</b>	Not applicable		
<b>GENERAL HAZARD:</b>	This product is a non-combustible, inorganic, slightly too moderately alkaline, aqueous solution. The Uniform Fire Code health hazard classification for this product is: <b>Irritant</b> . It may produce hazardous mists or hazardous decomposition products.		
<b>FIRE FIGHTING INSTRUCTIONS:</b>	<b>EXTINGUISHING MEDIA:</b>	Water, foam, CO <sub>2</sub> or dry chemicals. Use a water fog or spray to cool the containers exposed to the heat of a fire.	
<b>FIRE FIGHTING EQUIPMENT:</b>	Fire fighters should wear full protective equipment, including self-contained breathing apparatus.		
<b>HAZARDOUS COMBUSTION PRODUCTS:</b>	When heated to dryness and decomposition, it emits toxic molybdenum oxides and sodium oxide with trace or ultra-trace toxic oxide amounts, of iron, manganese, calcium, magnesium, phosphorus, potassium, sulfur, zinc and carbon.		

#### SECTION 6: ACCIDENTAL RELEASE MEASURES

<b>RELEASE TO LAND:</b>	Wearing recommended protective equipment and clothing, dike spill using soil, sand or compatible commercial absorbent. Pick up bulk of liquid using pumps or vacuum truck for potential recovery and return to appropriate container. Absorb remaining liquid using sand or commercially absorbent material; dispose as non-hazardous solid waste. Flush spill area with water; collect rinsates for disposal or sewer, as appropriate.
<b>RELEASE TO WATER:</b>	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

<b>STORAGE TEMPERATURE:</b>	Ambient	<b>STORAGE PRESSURE:</b>	Ambient
<b>GENERAL:</b>	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. Do not breathe vapors or mists. Use with adequate ventilation. Do not take internally. Keep the containers 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 those levels that may cause irritation.

### RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT

**RESPIRATOR:** For exposure above the ACGIH-TLV, OSHA-PEL or 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 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

<b>Appearance:</b>	Clear to hazy, light tan	<b>Bulk Density (pounds/ft<sup>3</sup>):</b>	Not applicable
<b>Physical State:</b>	Liquid	<b>Vapor Pressure:</b>	No data available
<b>Odor:</b>	No characteristic	<b>Vapor Density (air=1):</b>	No data available
<b>Odor Threshold:</b>	Not applicable	<b>Evaporation Rate (n-Butyl Acetate=1):</b>	Less than 1
<b>Molecular Formula:</b>	Mixture	<b>VOC Content / Organic Matter:</b>	Nil / 0.33%
<b>Molecular Weight:</b>	Not applicable	<b>% Volatile:</b>	Approximately 87
<b>Boiling Point:</b>	Greater than 100° C. (212° F.)	<b>Solubility in H<sub>2</sub>O:</b>	Soluble
<b>Freezing/Melting Point:</b>	Less than 0° C. (32° F.)	<b>Octanol/Water Partition Coefficient:</b>	No data available
<b>Specific Gravity:</b>	1.00 – 1.15 @ 20° C.	<b>pH (as is):</b>	8.0 - 9.5
<b>Density (pounds/gallon):</b>	Approximately 8.34	<b>pH (1% solution):</b>	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:** Strong oxidizers, strong alkali and caustics.

**HAZARDOUS DECOMPOSITION PRODUCTS:** When heated to dryness and decomposition, it emits toxic molybdenum oxides and sodium oxide with trace or ultra-trace toxic oxide amounts, of iron, manganese, calcium, magnesium, phosphorus, potassium, sulfur, zinc 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

<b>Components:</b>	<b><u>Disodium Molybdate, Dihydrate</u></b>
<b>Eye Contact:</b>	Rabbit: Mild Irritant
<b>Skin Contact:</b>	Rabbit: Not an Irritant
<b>Oral Rat LD<sub>50</sub>:</b>	2,810 mg/kg
<b>Dermal Rabbit LD<sub>50</sub>:</b>	No data available
<b>Inhalation Rat LC<sub>50</sub>:</b>	No data available
<b>Human Data:</b>	No data available
<b>Other Toxicological Data:</b>	Intraperitoneal Mouse LD <sub>50</sub> : 257 mg/kg
<b>Carcinogenicity:</b>	No data available
<b>Teratogenicity:</b>	Intravenous Mouse TD <sub>Lo</sub> : 968 mg/kg (8 Day pregnant)
<b>Mutagenicity:</b>	No data available
<b>Synergistic Products:</b>	None reported
<b>Target Organs:</b>	Eyes, Skin & Mucous membranes
<b>Medical Conditions Aggravated By Exposure:</b>	Skin or Respiratory disorders

## SECTION 12: ECOLOGICAL INFORMATION

### ENVIRONMENTAL FATE:

This product is soluble in water. No specific environmental fate information is available. This product is not expected to significantly affect the pH of water.

### 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 hazardous waste of Subpart C, nor is it listed as a hazardous waste under Subpart D. 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

<b>DOT PROPER SHIPPING NAME:</b>	<b>Not DOT Regulated (United States)</b>		
	<b>Hazard Class:</b> N/A	<b>UN Number:</b> N/A	<b>Packing Group:</b> N/A
	<b>Primary Label:</b> None	<b>Subsidiary Label(s):</b> None	
	<b>Primary/Subsidiary Placards:</b> None		
<b>DOT Reportable Quantity (RQ):</b>	Not listed	<b>RQ for Product:</b>	No
<b>Marine Pollutant:</b>	No		
<b>2012 North American Emergency Response Guidebook No.:</b>	N/A		
<b>TDG PROPER SHIPPING NAME:</b>	<b>NOT RESTRICTED</b>		
	<b>Hazard Class:</b> N/A	<b>UN Number:</b> None	<b>Packing Group:</b> N/A
	<b>Primary Label:</b> None	<b>Subsidiary Label(s):</b> None	
	<b>Primary/Subsidiary Placards:</b> None		
<b>TDG Reportable Quantity (RQ): *</b>	Not applicable		
<b>TDG Schedule XII:</b>	Not listed		
<b>Regulated Limit (RL): **</b>	Not listed	<b>RL for Product:</b>	N/A
<b>Other Shipping Information:</b>	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

<b>COMPONENTS:</b>	<u>Disodium Molybdate, Dihydrate</u>
<b><u>OSHA Target Organs:</u></b>	Eyes, Skin & Mucous membranes
<b><u>Carcinogenic Potential:</u></b>	
<b>Regulated by OSHA:</b>	No
<b>Listed on NTP Report:</b>	No
<b>Listed by IARC:</b>	No
IARC Group:	Not applicable
<b>ACGIH Appendix A:</b>	Not listed
A1 Confirmed Human:	Not applicable
A2 Suspected Human:	Not applicable

### U.S. EPA Requirements

#### Release Reporting

##### CERCLA (40 CFR 302)

<b>Listed Substance:</b>	Not listed
Reportable Quantity:	Not applicable
Category:	Not applicable
RCRA Waste No.:	Not applicable

<b>Unlisted Substance:</b>	Not applicable
Reportable Quantity:	Not applicable
Characteristic:	Not applicable
RCRA Waste No.:	Not applicable

## SECTION 15: REGULATORY INFORMATION (Continued from Page 4)

**COMPONENTS:** Disodium Molybdate, Dihydrate

### SARA TITLE III

**Section 302 & 303** (40 CFR 355):

**Listed Substance:** Not listed  
**Reportable Quantity:** Not applicable  
**Planning Threshold:** 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

**Section 313** (40 CFR 372):

**Listed Toxic Chemical:** Not listed  
**Reporting Threshold:** Not applicable

### U.S. TSCA Status

**Listed** (40 CFR 710): Yes

### State Regulations

**State of California: Safe Drinking Water and Toxins Enforcement Act, 1986 (Proposition 65):**

**Carcinogen:** No  
**Reproductive Toxin:** No

### Other Regulations

**State Right To Know Laws:** None Known

### 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  
**DSL or NDSL Lists:** 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 Molybdenum in a cool, dry, well ventilated, area away from incompatible materials and products. Always add this product to water with adequate mixing to ensure a uniform solution.

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

**SDS Distributed by:** Bio Huma Netics, Inc.

<b>Prepared By:</b> Frank S. Pidgeon, Sr. EHSS Director	<b>Date Prepared:</b> October 21, 2014
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