



SAFETY DATA SHEET

HUMA GRO® Manganese

HMIS	
HEALTH	2
FLAMMABILITY	0
PHYSICAL HAZARD	0
PPE	A

SECTION 1: CHEMICAL PRODUCT & COMPANY IDENTIFICATION

PRODUCT IDENTIFIER:	HUMA GRO® Manganese	Product# 090
GENERAL USE:	Used as a part of a plant nutrition program.	
PRODUCT DESCRIPTION:	A clear, light amber liquid having a characteristic odor.	
SUPPLIER INFORMATION:	Bio Huma Netics, Inc. 1331 W Houston Avenue Gilbert, AZ 85233	EMERGENCY PHONE NUMBERS
For Additional SDS call:	PHONE: (480) 961-1220	CHEMTREC: (In the USA) 800-424-9300 (International) 703-527-3887

SECTION 2: HAZARDS IDENTIFICATION

HAZARDS OVERVIEW:

A clear, light amber, moderately acidic liquid having a characteristic odor. The liquid and mists may cause irritation to the eyes, skin and respiratory tract. This product may be toxic by ingestion or inhalation of high mist concentrations. **The NIOSH I.D.L.H. for Manganese compounds is: 500 mg/m³ (as Mn).**

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

CLASSIFICATION: HAZARD CATEGORY 3 - MILD SKIN IRRITATION

SIGNAL WORD: WARNING

HAZARD STATEMENT: H316 - WARNING - causes mild skin irritation

PRECAUTIONARY STATEMENT: P332+P313; If skin irritation occurs: Get medical attention/advice.

SECTION 3: COMPOSITION & INFORMATION ON INGREDIENTS

COMPONENT	CAS #	OSHA HAZARD	WT %	ACGIH		OSHA	
				TLV _(TWA)	STEL	PEL _(TWA)	STEL
Manganese Sulfate	7785-87-7	Eye, Skin & Respiratory Irritant; Central Nervous System toxin; Moderately Toxic by Ingestion	19 ± 3	0.2 mg/m ³ Proposed: 0.02 mg/m ³ Respirable fraction	None	None Ceiling 5 mg/m ³	None
Diammonium Citrate	3012-65-5	Eye, Skin & Respiratory Irritant	9 ± 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, 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 swallowed, get medical attention 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 may be slightly to moderately 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:	Not applicable	Upper: Not applicable
Autoignition Temperature:	Not applicable		
GENERAL HAZARD:	This product is an aqueous solution of inorganic and organic salts that are in a moderately acidic solution. The Uniform Fire Code health hazard classification for this product is: Irritant . This product 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, carbon monoxide, carbon dioxide, manganese oxide, nitrogen oxides and sulfur oxides with trace or ultra-trace toxic oxide amounts of phosphorus, potassium, iron, magnesium, zinc, 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 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 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. Avoid getting 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 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 ACGIH-TLV, OSHA Ceiling level or levels that may cause irritation.

RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT

RESPIRATOR: For exposure above the ACGIH-TLV, OSHA Ceiling level 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 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 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, or full protective clothing 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, light amber	Bulk Density (pounds/ft³):	Not applicable
Physical State:	Liquid	Vapor Pressure:	No data available
Odor:	Characteristic	Vapor Density (air=1):	No data available
Odor Threshold:	Not determined	Evaporation Rate (n-Butyl Acetate=1):	Less than 1
Molecular Formula:	Mixture	VOC Content / Organic Matter:	Nil / 4.5%
Molecular Weight:	Not applicable	% Volatile:	Approximately 65
Boiling Point:	Greater than 100° C. (212° F.)	Solubility in H₂O:	Complete
Freezing/Melting Point:	Less than 0° C. (32° F.)	Octanol/Water Partition Coefficient:	No data available
Specific Gravity:	1.10 – 1.30 @ 20° C.	pH (as is):	1.5 - 2.0
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: Do not store this product below 50° F (10° C) or above 90° F (30° C)

INCOMPATIBLE MATERIAL: Contact with caustics & alkali, sulfides, sulfites, cyanides and chlorine releasers.

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

Components:	<u>Manganese Sulfate</u>	<u>Diammonium Citrate</u>
Eye Contact:	No data available	No data available
Skin Contact:	No data available	No data available
Oral Rat LD₅₀:	2,150 mg/kg	No data available
Dermal Rabbit LD₅₀:	No data available	No data available
Inhalation Rat LC₅₀:	No data available	No data available
Human Data:	No data available	No data available
Other Toxicological Data:	Oral Mouse LD ₅₀ : 2,330 mg/kg	Intravenous Mouse LD ₅₀ : 331 mg/kg
Carcinogenicity:	Intraperitoneal Mouse TD _{Lo} : 660 mg/kg/8 Weeks; Tumorigenic – Neoplastic by RTECS criteria	No data available
Teratogenicity:	Intraperitoneal Mouse TD _{Lo} : 34,356 ug/kg; (female 10 Days pregnant) Post-implantation mortality	No data available
Mutagenicity:	Bacteria B Subtilis DNA Repair: 50 mmol/ Liter	No data available
Synergistic Products:	None reported	None reported
Target Organs:	Eyes, Skin, Lungs & Central Nervous Systems	Eyes, Skin & Lungs
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 slightly 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 CLASSIFICATION: Non-RCRA 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-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:	Not DOT Regulated	UN Number:	N/A	Packing Group:	N/A
	Hazard Class:	N/A			
	Primary Label:	None	Subsidiary Label(s):	None	
	Primary/Subsidiary Placards:	None			
DOT Reportable Quantity (RQ):	Not listed	RQ for Product:	Not applicable		
Marine Pollutant:	No				
2012 North American Emergency Response Guidebook No.:	N/A				
TDG PROPER SHIPPING NAME:	NOT RESTRICTED	UN Number:	None	Packing Group:	N/A
	Hazard Class:	N/A			
	Primary Label:	None	Subsidiary Label(s):	None	
	Primary/Subsidiary Placards:	None			
TDG Reportable Quantity (RQ): *	Not applicable				
TDG Schedule XII:	Not listed				
Regulated Limit (RL): **	Not listed	RL for Product:	N/A		
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:	<u>Manganese Sulfate</u>	<u>Diammonium Citrate</u>
<u>OSHA Target Organs:</u>	Eyes, Skin, Lungs & Central Nervous Systems	Eyes, Skin & Lungs
<u>Carcinogenic Potential:</u>		
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:	Yes (Manganese Compounds)	Yes
Reportable Quantity:	1 pound	5,000 pounds
Category:	Not listed	D
RCRA Waste No.:	Not listed	Not listed
Unlisted Substance:	Not applicable	Not applicable
Reportable Quantity:	Not applicable	Not applicable
Characteristic:	Not applicable	Not applicable
RCRA Waste No.:	Not applicable	Not applicable

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: <u>N</u>	Sudden Release of Pressure: <u>N</u>	Reactive: <u>N</u>	Acute Health: <u>Y</u>	Chronic Health: <u>N</u>
Planning threshold:	10,000 pounds	10,000 pounds			

Section 313 (40 CFR 372):

Listed Toxic Chemical:	Yes (Manganese Category)	Yes (Aqua Ammonium Salts)
Reporting Threshold:	10,000 pounds	10,000 pounds

U.S. TSCA Status

Listed (40 CFR 710):	Yes	Yes
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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
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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	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:

When making dilutions, always add Manganese to water, or aqueous solutions, with adequate mixing to ensure a uniform solution. Do not add this product to hypochlorite bleaches, chlorine sanitizers, or chlorinated cleaners as this can liberate toxic, corrosive Chlorine gas.

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

SDS Distributed by: Bio Huma Netics, Inc.

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