

MATERIAL SAFETY DATA SHEET

GRO-POWER, INC.

DATE PREPARED: 10/02

SECTION 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Material/Product Name (s) Gro-Power MANGANESE (35% Mn)

CAS Number: Mineral Mixture

Chemical family: Inorganic Oxide

General Use: Gro-Power Manganese is a carboxylate of manganese plus other micronutrients; a granulated micronutrient formulated to contain 35% manganese.

Manufacture/Supplier: Gro-Power, Inc.
15065 Telephone Ave.
Chino, CA 91710
Phone: (909) 393-3744

SECTION 2. INGREDIENTS/COMPOSITION

Ingredient name:	CAS Number:	Percent:	IARC/NTP/OSHA:	Exposure Limits:
Manganese Compounds (As/Mn)	7439-96-5	35	No	Manganese dust and components as/Mn/ ACGIH TLV:TWA 0.2 mg/m ³ OSHA PEL:TWA 0.5 mg/m ³ NIOSH REL:TWA 1 mg/m ³
Quartz (Crystalline Silica)	14808-60-7	<1	Yes	ACGIH TLV: TWA Respirable: 0.05 mg/m ³ OSHA PEL: TWA Total Dust: 30 mg/m ³ divided by (% SiO ₂ + 2); Respirable: 10 mg/m ³ divided by (% SiO ₂ +2)
Nonhazardous Ingredients	_____	60	No	OSHA PEL: TWA Total dust: 15 mg/m; Respirable dust: 5 mg/m ³ . ACGIH TLV: TWA Total Dust: 10 mg/m ³ Respirable dust: 3 mg/m ³

Trace Metals in Gro-Power Manganese: Lead<100-300; arsenic<1-5; cadmium <1-5, and mercury <1-5.

Lead, inorganic CAS#7439-92-1 is listed by IARC as a possible human carcinogen, Group 2B. ACGIH and OSHA Exposure Limit for lead is 0.05 mg/m³

Quartz, a polymorph of crystalline silica, is classified by IARC as a "known human carcinogen – Group 1". NTP lists respirable crystalline silica amongst substances, which may "reasonably be anticipated to be carcinogens".

SECTION 3. HAZARDS IDENTIFICATION

HMIS

HEALTH HAZARD	2 – MODERATE HAZARD
FLAMMABILITY HAZARD	0 – MINIMAL HAZARD
REACTIVITY HAZARD	0 - MINIMAL HAZARD
PERSONAL PROTECTION	8 – Eye Protection, Gloves

EMERGENCY OVERVIEW:

Dry, free-flowing, black granules ranging in size from minus 6 to plus 35 mesh. Avoid excessive inhalation of dust.

Not a fire, spill nor environmental hazard.

Target organs: Lungs

Primary route(s) of entry: Inhalation

Acute effects: Irritation from excessive exposure to skin, eyes, nose, throat and respiratory system. Exposure via inhalation to heavy concentrations of dust containing manganese compounds for as little as three months have affected the central nervous system.

Chronic effects: The excessive inhalation of manganese compounds usually begins with complaints of languor and sleepiness. This is followed by weakness in the legs and the development of stolid, mask-like faces. The patient speaks with a slow monotonous voice. Then muscular twitching appears varying from a fine tremor of the hands to coarse, rhythmical movements of the arms, legs, and trunk. There is a slight increase in tendon reflexes, ankle and patellar clonus, and a typical Parkinsonian slapping gate.

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Signs & Symptoms of Overexposure:

Eye contact: Particulate is a physical eye irritant.

Skin contact: Low toxicity by skin contact.

Inhalation: Chronic overexposure by inhalation of airborne particulate may irritate upper respiratory system as well as the throat. Possible slurred speech, and/or unsteady gait from extremely high exposure.

Ingestion: An unlikely route of exposure. If ingested in sufficient quantity, may cause gastrointestinal disturbances.

Symptoms may include irritation, nausea, vomiting and diarrhea.

SECTION 4. FIRST AID MEASURES

Eye contact: Flush eyes, including under the eyelids, with large amounts of water. If irritation persists, seek medical attention.

Skin contact: Wash affected areas with mild soap and water.

Inhalation: Remove victim to fresh air. If not breathing, give artificial respiration. Get immediate medical attention.

Ingestion: Ingestion is an unlikely route of exposure. If ingested in sufficient quantity and victim is conscious, give 1-2 glasses of water or milk. Never give anything by mouth to an unconscious person. Leave decision to induce vomiting to qualified medical personnel, since particles may be aspirated into the lungs. Seek immediate medical attention.

SECTION 5. FIRE FIGHTING MEASURES

NFPA code: Flammability: 0, Health: 0, Reactivity: 0, Special: 0.

Flash point: Not Combustible

Unusual Fire Hazard/Extinguishing Media: None

Hazardous Decomposition Products: None

Fire fighting instructions: Firefighters should wear NIOSH-approved, positive pressure, self-containing breathing apparatus and full protective clothing.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Spill procedures: Product is not a spill hazard. Cleanup and place spilled material into a suitable container, being careful to avoid creating excessive dust from dried product. If conditions warrant, clean-up personnel should wear approved respiratory protection, gloves, and goggles to prevent irritation from contact and/or inhalation.

SECTION 7. HANDLING AND STORAGE

Storage: Store in dry, protected storage. Product is stable under normal conditions of dry storage. Minimize generation of dust during material handling and transfer.

SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Engineering controls: Provide sufficient ventilation; in both volume and air flow patterns, to control concentrations of mist/dust below allowable exposure limits.

Personal protective equipment: The use of eye protection, gloves and long sleeve clothing is recommended.

Respiration protection: Provide workers with NIOSH approved respirators in accordance with requirements of 29 CFR 1910.13 for level of exposure incurred.

Hygienic Practices: Avoid contact with skin, eyes and clothing. After handling product, wash hands before eating or drinking.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: A dry, dark gray to black mixture of BB sized granules; odorless.

Boiling Point: Not Applicable

Bulk Density (g/cc): Mixture

Melting Point: >2000°F

Bulk Weight (lbs/cu.ft): ~ 98

Water Solubility: Slight

% Volatile by volume: 0

PH (10% aqueous slurry): 6-8

Evaporation rate: Not Applicable

SECTION 10. STABILITY AND REACTIVITY

Hazardous Polymerization: Will not occur

Chemical Incompatibilities: Components in product can react violently with hydrogen peroxide, calcium hypochlorite or fluorine.

Hazardous Decomposition Products: None

SECTION 11. TOXICOLOGICAL INFORMATION

Manganese Compounds: Toxic and Hazard Review (SAX): can cause central nervous system and pulmonary system damage by inhalation of fume and dust: very few poisonings have occurred from ingestion; some are experimental tumorigens. Chronic manganese poisoning is a clearly characterized disease that results from inhalation of fume or dust of manganese. Exposure to heavy concentrations of fume or dust for as little as three months may produce the condition, but usually develops after 1-3 years of exposure.

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TOXICOLOGICAL INFORMATION (manganese compounds) continued from page 2.

The central nervous system is the chief site of damage. If cases are removed from exposure shortly after appearance of symptoms, some improvement in patient's condition frequently occurs, through there may be some residual disturbances in gait and speech.

Toxicity Data: (Manganese compounds) ihl: mus TCCLo.49 mg/m³/7H (75D pre/1-18D PREG): PEP; Scu-mus

LD₅₀: 422 mg/kg; inv-rbt LDLo: 45 mg/kg.

Quartz CAS# 14808-60-7. Toxic and Hazard Review (Sax): Experimental poison by intratracheal and intravenous routes. Quartz is an experimental carcinogen; tumorigen; and neoplastigen. Human systemic effects by inhalation: cough, dyspnea, liver effects. Listed by IARC as a "known human carcinogen"

Group 1. Listed by NTP.

Toxicity Data: No LD₅₀ in RTECS. Ihl-hmn TClO 16 mppcf/8H/17.9Y-1:PUL; ihl: hmn LCLo:300 μ g/m³/10Y-I;LVR. Other species toxicity data (NIOSH RTECS) inv-rat LDLo: 90 mg/kg; itr-rat LDLo: 20 mg/kg;

Ivn-mus LDLo: 40 mg/kg; ivn-mus 20 mg/kg.

Balance of Ingredients: No LD₅₀ or LC₅₀ found for oral, dermal, or inhalation routes of administration.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicological/Chemical Fate Information:

No data available on any adverse effects of this material on the environment.

SECTION 13. DISPOSAL INFORMATION

Waste Management/Disposal: This product does not exhibit any characteristics of a hazardous waste and is suitable for landfill disposal. Pleas be advised however that state and local requirements for waste disposal may be more restrictive or otherwise different from federal regulations. Consult state and local regulations regarding the proper disposal of this material. If, however, the product has been altered or contaminated with other materials, appropriate waste analysis may be necessary to determine the proper method of disposal. A qualified environmental professional in accordance with applicable federal, state, and local regulations should determine waste characterization and disposal/treatment methods.

SECTION 14. TRANSPORT INFORMATION

US Department of Transportation: Not regulated by DOT as a hazardous material. No hazard class, no label or placard required, no UN or NA number assigned.

Canadian TDG Hazard Class & PIN: Not regulated.

SECTION 15. REGULATORY INFORMATION

Product or components of mixture regulated under following list:

SARA TITLE III:

Section 302:	No	(Extremely Hazardous Substances)
Section 304:	No	(Emergency Release)
Section 311:	Yes	(Community Right-to-Know, MSDSs or List of Chemicals)
Section 312:	Yes	(Community Right-to-Know, Inventories & Locations, (Tier I/II))
Section 313:	Yes	(Toxic Chemicals, Toxic Chemical Release Reporting, Form R)

Manganese is listed and subject to reporting requirements of SARA Section 313.
The product contains 35% manganese.

CERCLA Hazardous Substance List, RQ: No

TSCA: Yes. All substances in this product are listed in the TSCA inventory.

California Proposition 65: This product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive toxins.

SECTION 16. OTHER INFORMATION

ACRONYMS AND REFERENCES USED IN PREPARATION OF MSDS':

ACGIH:	American Conference of Governmental Industrial Hygienists
CAS#:	CAS Registration Number is an assigned number to identify a specific chemical substance.
CERCLA:	Comprehensive Environmental Response, Compensation & Liability Act
EPCRA:	Emergency Planning and Community Right-to-Know Act of 1986
HMIS™	Hazardous Materials Identification System (National Paint & Coatings Association)
IARC:	International Agency for Research on Cancer
Mg/m ³ :	Milligrams per cubic meter
NIOSH:	National Institute for Occupational Safety and Health
NFPA:	National Fire Protection Association
NTP:	National Toxicology Program
OSHA:	Occupational Safety and Health Administration
PEL:	Permissible Exposure Limit (OSHA)

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ACROYNMS AND OTHER INFORMATION continued from page 3

SARA: Superfund Amendments and Reauthorization Act
TITLE III: Emergency Planning and Community Right To Know Act
Section 302: Extremely Hazardous Substances
Section 304: Emergency Release
Section 311: Community Right-to-Know, MSDSs or List of Chemicals
Section 312: Community Right-to-Know, Inventories & Locations. (Tier I/II)
Section 313: Toxic Chemicals, Toxic Chemical Release Reporting, Form R
TLV: Threshold Limit Values (ACGIH)
TWA: Time Weighted Average
29CFR1910.134: OSHA Respiratory Protection Standard

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Kirk, R. and Othmer, D., Encyclopedia **of Chemical Technology**, Third Edition, Wiley-Interscience, New York, NY 1982.
Clansky, K.B., **Suspect Chemicals Sourcebook**, 1992-2 Editions, Roytech Publications, Bethesda, Maryland.
Sax, N. Irving and Lewis, R.J. **Hawley's Condensed Chemical Dictionary**, Eleventh Ed., Van Nostrand Reinhold Co., Inc., New York, NY
Manufacturers/Suppliers, **Material Safety Data Sheets on Raw Materials Used**
American National Standard for Hazardous Industrial Chemicals-**Material Safety Data Sheets – Preparation**,
American National Standards Institute, Inc. 11 West 42nd St., New York, NY 10036.

IMPORTANT:

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