



Safety Data Sheet

Section 01 - Identification

Product Identifier	Manganese Greensand Plus
Other Means of Identification	None
Product Use and Restrictions on Use	Filter medium for water to remove iron, manganese, hydrogen sulphide, arsenic and radium.
Initial Supplier Identifier	ClearTech Industries Inc. 1500 Quebec Avenue Saskatoon, SK. Canada S7K 1V7
Prepared By	ClearTech Industries Inc. Technical Writer Phone: 1 (800) 387-7503
24-Hour Emergency Phone	Phone: 1 (306) 664 – 2522

Section 02 - Hazard Identification

GHS-Classification

Acute Toxicity-Oral	Category 4
Acute Toxicity-Inhalation	Category 4
STOT-Repeated Exposure	Category 1
Carcinogenicity	Category 1A

Physical Hazards

No known physical hazards.

Danger

Hazards Statements

H312 – Harmful in contact with skin.
H332 – Harmful if inhaled.
H372 – Causes damage to the lungs through prolonged or repeated inhalation.
H350 – May cause cancer.

Pictograms



Precautionary Statements

P405 – Store locked up.
P201 – Obtain special instructions before use.
P202 – Do not handle until all safety precautions have been read and understood.

P280 – Wear protective gloves, protective clothing, eye protection, and face protection.

P308 + P313 – IF exposed or concerned: Get medical advice/attention.

P261 – Avoid breathing dust.

P271 – Use only outdoors or in a well-ventilated area.

P304 + P340 – IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P264 – Wash hands thoroughly after handling.

P270 – Do not eat, drink or smoke when using this product.

P301 + P312 – IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

P330 – Rinse mouth.

P501 – Dispose of contents/container in accordance with all federal, provincial, and/or local regulations including the Canadian Environmental Protection Act.

Section 03 - Composition / Information on Ingredients

Chemical Name	CAS Number	Weight %	Unique Identifiers
Manganese Dioxide	1313-13-9	3.2-4.8%	
Quartz (SiO ₂)	14808-60-7	96-98%	

Section 04 - First Aid Measures

Inhalation	If exposed to excess levels of dusts or fumes, remove victim to fresh air. Give artificial respiration only if breathing has stopped. If breathing is difficult, give oxygen. Seek immediate medical attention.
Skin Contact / Absorption	Remove contaminated clothing. Rinse skin with soap and water. Seek medical attention if irritation occurs or persists.
Eye Contact	Do not rub eyes. Check for and remove any contact lenses. Flush immediately with water for at least 30 minutes. Forcibly hold eyelids apart to ensure complete irrigation of eye tissue. If irritation persists, seek medical attention.
Ingestion	If ingested in large quantities, give 1-2 glasses of water or milk. DO NOT give anything by mouth to an unconscious person. Do not induce vomiting unless advised to by a qualified medical personnel. Seek immediate medical attention.
Additional Information	Not Available

Section 05 - Fire Fighting Measures

Suitable Extinguishing Media	Use dry chemical or CO ₂ to extinguish fires involving this material.
Unsuitable Extinguishing Media	Not Available
Specific Hazards Arising From the Chemical	This material is a strong oxidizing agent, which liberates oxygen during thermal decomposition. It may increase the burning rate of combustibles with a flare-burning effect. It may cause reignition after a fire is extinguished.
Special Protective Equipment and Precautions for Fire-Fighters	Wear NIOSH-approved self-contained breathing apparatus and protective clothing.
Further Information	Not Available

Section 06 - Accidental Release Measures

Personal Precautions / Protective Equipment / Emergency Procedures	Wear appropriate personal protective equipment. Ventilate area. Only enter area with PPE. Stop or reduce leak if safe to do so. Flush with water to remove any residue.
---	---

Environmental Precautions Prevent material from entering sewers, streams and waterbodies.

Methods and Materials for Containment and Cleaning Up If possible, collect and reuse material. Vacuum or sweep up dry material and place in a container for reuse. Avoid creating excessive airborne dust. Cleanup personnel need to wear approved respiratory protection (air-purifying or air-supply), gloves, long, sleeved clothing and goggles to prevent irritation from contact and inhalation.

Section 07 - Handling and Storage

Precautions for Safe Handling Use proper equipment for lifting and transporting all containers. Use sensible industrial hygiene and housekeeping practices. Wash thoroughly after handling. Avoid all situations that could lead to harmful exposure.

Conditions for Safe Storage Store in a cool, dry, well-ventilated place. Keep container tightly closed when not in use. Product or component is a powerful oxidizer, hence it should not be stored near organic matter or other easily oxidizable substances such as; Sulphur, sulfides, phosphides, hypophosphides or incompatible materials such as hydrogen peroxide and sodium peroxide.

Incompatibilities Should not be heated or rubbed with organic matter or other easily oxidizable substances like Sulphur, sulphides, phosphides, hypophosphides. Incompatible with hydrogen peroxide and sodium peroxide.

Section 08 - Exposure Controls and Personal Protection

Exposure Limit(s)

Component	Regulation	Type of Listing	Value
Manganese	ACGIH	TLV-TWA	0.02mg/m ³ (respirable fraction)
	OSHA	PEL-T-C	5mg/m ³

Engineering Control(s)

Ventilation Requirements Mechanical ventilation (dilution or local exhaust), process or personnel enclosure and control of process conditions must be provided in accordance with all fire codes and regulatory requirements. Supply sufficient replacement air to make up for air removed by exhaust systems.

Other Emergency shower and eyewash must be available and tested in accordance with regulations and be in close proximity.

Protective Equipment

Eyes/Face Chemical safety glasses with side shields should be worn while product is being handled.

Hand Protection Impervious gloves of chemically resistant material (rubber or PVC) should be worn at all times. Wash contaminated clothing and dry thoroughly before reuse.

Skin and Body Protection Body suite, aprons, and/or coveralls of chemical resistant material should be worn at all times. Wash contaminated clothing and dry thoroughly before reuse.

Impervious boots of chemically resistant material should be worn at all times. No special footwear is required other than what is mandated at place of work.

Respiratory Protection Use NIOSH/MSHA approved respiratory protection (air purifying or air supplying) when concentrations are above exposure limit value. A respiratory protection program that meets OSHA 29 CFR part 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant the use of a respirator.

Thermal Hazards Not Available

Section 09 - Physical and Chemical Properties

Appearance

Physical State	Solid
Colour	Uniform brownish-black granular material.
Odour	Odourless
Odour Threshold	Not Applicable

Property

pH	9-10 (10% aqueous slurry)
Melting Point/Freezing Point	~1538°C
Initial Boiling Point and Boiling Range	Not Available
Flash Point	Not Applicable
Evaporation Rate	Not Available
Flammability	Non-flammable
Upper Flammable Limit	Not Applicable
Lower Flammable Limit	Not Applicable
Vapour Pressure (mm Hg, 20°C)	Not Available
Vapour Density (Air=1)	Not Available
Relative Density	Not Available
Solubility(ies)	Slightly soluble
Partition Coefficient: n-octanol/water	Not Available
Auto-ignition Temperature	Not Applicable
Decomposition Temperature	Not Available
Viscosity	Not Available
Explosive Properties	Non-explosive
Specific Gravity (Water=1)	Not Available
% Volatiles by Volume	1-2%
Formula	Not Available
Molecular Weight	Not Available

Section 10 - Stability and Reactivity

Reactivity	Alpha-quartz is stable below 575°C where it transforms to bet-quartz, which is stable between 575°C and 870°C, quartz transforms to tridymite.
Stability	Stable under normal conditions of storage.
Possibility of Hazardous Reactions	None known.
Conditions to Avoid	Incompatibles, heat and flammable materials.
Incompatible Materials	Should not be heated or rubbed with organic matter or other easily oxidizable substances like sulphur, sulphides, phosphides, hypophosphides. Incompatible with hydrogen peroxide and sodium peroxide.
Hazardous Decomposition Products	Reacts with concentrated hydrochloric acid to produce poisonous chlorine gas.

Section 11 - Toxicological Information

Acute Toxicity Estimate

Component	Oral LD₅₀	Dermal LD₅₀	Inhalation LC₅₀
Green Sand Plus	520 mg/kg	2000 mg/kg	1.5 mg/L

This product has been classified in accordance with the Hazardous Products Regulations using ATE formula documented in the GHS standard.

Chronic Toxicity – Carcinogenicity

Component	IARC
Quartz	Group 1: Carcinogenic to humans

Skin Corrosion/Irritation	Prolonged or repeated exposure may cause slight to moderate irritation.
Ingestion	Ingestion is an unlikely route of exposure; no hazard in normal industrial use. Small amounts (<tablespoonful) swallowed during normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury. Large ingested quantities may cause gastrointestinal disturbances. Symptoms may include irritation, nausea, vomiting, abdominal pain, and diarrhea.
Inhalation	Overexposure by inhalation of airborne particulate, dust or fumes may be irritating to the nose, throat, and respiratory tract. Inhalation of excessive levels of dust or fumes may be harmful.
Serious Eye Damage/Irritation	Contact with particulate may cause slight to moderate eye irritation. Abrasive action of dust particulate can damage eyes.
Respiratory or Skin Sensitization	Not a skin sensitizer.
Germ Cell Mutagenicity	Laboratory experiments have shown mutagenic effects.
Reproductive Toxicity	Not considered a reproductive toxin.
STOT-Single Exposure	Excessive, short-term exposure to airborne mineral dusts and particulate may cause upper respiratory and eye irritation. Exposure via inhalation to high concentration of dusts containing manganese compounds for as little as three months have affected the central nervous system.

STOT-Repeated Exposure	Excessive, long-term, inhalation of airborne mineral dusts and particulate may contribute to the development of bronchitis, reduced breathing capacity, and may lead to the increased susceptibility to lung disease. Manganese poisoning: The excessive, chronic 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 appear, 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.
Aspiration Hazard	Not Available
Synergistic Materials	There is disagreement about whether tobacco smoke increases the severity of the effect of crystalline silica on respiratory impairment. Simultaneous exposure to known carcinogens, for example, benzo(a)pyrene, can increase the carcinogenicity of crystalline silica.

Section 12 – Ecological Information

Ecotoxicity

Component	Toxicity to Algae	Toxicity to Fish	Toxicity to Daphnia and Other Aquatic Invertebrates
Quartz	Not Available	LC ₅₀ (Lepomis macrochirus, 96hr): 486mg/L	LC ₅₀ (Daphnia magna, 24hr): 625mg/L
Biodegradability	Not Available		
Bioaccumulation	Not Available		
Mobility	Insoluble in water.		
Other Adverse Effects	Not Available		

Section 13 – Disposal Considerations

Waste From Residues/Unused Products	Dispose in accordance with all federal, provincial, and/or local regulations including the Canadian Environmental Protection Act.
Contaminated Packaging	Dispose in accordance with all federal, provincial, and/or local regulations including the Canadian Environmental Protection Act.

Section 14 – Transport Information

UN Number	Not Regulated
UN Proper Shipping Name	Not Regulated
Transport Hazard Class(es)	Not Regulated
Packaging Group	Not Regulated
Environmental Hazards	Not listed as a marine pollutant under Canadian TDG Regulations, schedule III.
Special Precautions	Not Available
Transport in Bulk	Not Available
<u>TDG</u>	
Other	Secure containers (full and/or empty) with suitable hold down devices during shipment and ensure all caps, valves, or closures are secured in the closed position.

TDG PRODUCT CLASSIFICATION: This product has been classified on the preparation date specified at section 14 of this MSDS / SDS, for transportation in accordance with the requirements of part 2 of the Transportation of Dangerous Goods Regulations. If applicable, testing and/or published test data regarding the classification of this product are listed in the references at section 16 of this MSDS / SDS.

Section 15 – Regulatory Information

NOTE: THE PRODUCT LISTED ON THIS SDS HAS BEEN CLASSIFIED IN ACCORDANCE WITH THE HAZARD CRITERIA OF THE CANADIAN CONTROLLED PRODUCTS REGULATIONS. THIS SDS CONTAINS ALL INFORMATION REQUIRED BY THOSE REGULATIONS.

Section 16 – Other Information

Preparation Date

September 28, 2015

Note: The responsibility to provide a safe workplace remains with the user. The user should consider the health hazards and safety information contained herein as a guide and should take those precautions required in an individual operation to instruct employees and develop work practice procedures for a safe work environment. The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by the use of this material. It is the responsibility of the user to comply with all applicable laws and regulations.

Attention: Receiver of the chemical goods / SDS coordinator

As part of our commitment to the Canadian Association of Chemical Distributors (CACD) Responsible Distribution[®] initiative, ClearTech Industries Inc. and its associated companies require, as a condition of sale, that you forward the attached Safety Data Sheet(s) to all affected employees, customers, and end-users. ClearTech will send any available supplementary handling, health, and safety information to you at your request.

If you have any questions or concerns please call our customer service center.

References:

- 1) CHEMINFO
- 2) eChemPortal
- 3) TOXNET
- 4) Transportation of Dangerous Goods Canada
- 5) HSDB
- 6) ECHA
- 7) PAN

ClearTech Industries Inc. - Locations

Corporate Head Office: 1500 Quebec Avenue, Saskatoon, SK, S7K 1V7

Phone: 1(306) 664 – 2522

Fax: 1(888) 281-8109

www.cleartech.ca

24 Hour Emergency Number - All Locations – 1(306) 664-2522