



SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product identifier : GreensandPlus™
Other identifier : None

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/preparation : Water Purification – the removal of heavy metals and sulfur compounds
Use only as directed.

1.3. Details of the supplier of the safety data sheet

Carbon Enterprises Inc.
PO Box 787
28205 Scippo Creek Rd
Circleville, OH 43113
800-344-5770

info@ceifiltration.com
ceifiltration.com

1.4. Emergency telephone number

Emergency number 740-420-6472
9:00 AM to 4:30 PM
Monday through Friday

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Not a fire or spill hazard. Low toxicity, dry dust is a nuisance particulate. Generally, health effects are provided for exposure to dust that may be generated during product transfer and handling.

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) : None
Signal word (GHS-US) : None
Hazard statements (GHS-US) : This mixture does not meet the criteria for classification.
Precautionary statements (GHS-US) : P260 - Do not breath dust
P285 - In case of inadequate ventilation, wear respiratory protection

2.3. Other hazards

Derived from natural ores; no adverse environmental affects known. However, prevent spilled product from entering streams, water bodies, and wastewater systems.

SECTION 3: Composition/information on ingredients

3.1. Substances

Name	Synonyms and Trade Names	Product Identifier	% by Wgt.
Quartz (SiO ₂)	Agate; Cristobalite; Crystallizes Silicone Dioxide; Quartz Silica; Silica Dust; Silica Flour (Powdered Crystalline Silica); Silica, Crystalline Quartz; Tripoli	(CAS No.) 14808-60-7	90.4-93.6
Manganese Dioxide	Manganese Dioxide; Manganese Black; Manganese (IV) Oxide; Peroxide Manganese Superoxide	(CAS No.) 1313-13-9	3.2-4.8
Nonhazardous Ingredients / Inert Materials/ Proprietary	N/A	N/A	3.2-4.8

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures after inhalation : If exposed to excessive levels of dusts or fumes, remove to fresh air and get medical attention if cough or other symptoms develop. If not breathing, give artificial respiration or give oxygen by trained personnel and get medical attention.
- First-aid measures after skin contact : Immediately wash affected area with mild soap and water to remove any dust adhering to the skin. Get medical attention if irritation develops or persists.
- First-aid measures after eye contact : Remove material by immediately flushing eyes with clean, flowing, lukewarm water (low pressure) for at least 15 minutes. Get medical attention if pain or irritation persists.
- First-aid measures after 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 lungs. Seek immediate medical attention.

4.2. Most important symptoms and effects, both acute and delayed

Over exposure by inhalation of airborne particulate, dust, or fumes is irritating to the nose, throat, and respiratory tract. Inhaling excessive level of dust may be harmful. Prolong or repeated contact may cause slight to moderate skin irritation. Contact with particulate may cause slight to moderate eye irritation. Abrasive action of dust particulate can damage eye.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically

SECTION 5: Firefighting measures

5.1. Extinguishing media

Use dry chemical or CO₂ to extinguish fires involving this material

5.2. Special hazards arising from the substance or mixture

Material will not burn. Although not combustible, this material is a strong oxidizing agent, which liberates oxygen during thermal decomposition. It may increase the burning rate of combustibles with a flare-burring effect.

5.3. Advice for firefighters

Material should be kept out of eyes and of skin. As in any fire, wear self-contained breathing apparatus pressure-demand. MSHA/NIOSH (approved or equivalent) and full protective gear. DO not release runoff from fire control methods to sewers or waterways.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Keep unnecessary personnel away. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Eliminate all sources of ignition. Avoid contact with eye and skin or inhalation of dust.

6.2. Environmental precautions

Product is dry solid (granular or powder) and not readily soluble in water. However, prevent spilled product from entering streams, water bodies, and wastewater systems.

6.3. Methods and material for containment and cleaning up

Contain any spills to prevent migration and entry into sewers or streams. Vacuum or sweep up dry material and place in 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 7: Handling and storage

7.1. Precautions for safe handling

Minimize dust generation and accumulation. Avoid breathing dust. Avoid contact with skin and eyes. Wash thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

Store in a cool, dry area. Keep container closed when not in use. Product or component is a powerful oxidizer, hence it should not be stored near organic material or other easily oxidizable substances; e.g. sulfur, sulfides phosphides,

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hypophosphides, etc. or incompatible materials such as hydrogen peroxide and sodium peroxide.

7.3. Specific end use(s)

For water purification use to remove heavy metals and Sulphur compounds

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Chemical Name	OSHA		ACGIH TLV®		NIOSH REL		LISTED CARCINOGEN (YES/NO)		
	PEL (mg/m ³)	CEILING (mg/m ³)	TWA (mg/m ³)	STEL (mg/m ³)	TWA (mg/m ³)	STEL (mg/m ³)	NTP	IARC	OSHA
Quartz (SiO ₂)	10/ (% SiO ₂ +2)	NL	0.025	0.1	0.05	NL	YES	YES	YES
Manganese Dioxide (MnO ₂)	N/A	5F (as Mn)	5F (as Mn)	NL	1 (as Mn)	3 (as Mn)	NO	NO	NO
Nonhazardous Ingredients / Inert Materials / Proprietary	1S T; S	NL	10 T; 5R	NL	NL	NL	NO	NO	NO

*Notes:

- T Total Dust; R=Respirable dust, F=Fume
- Exposure limits listed for each ingredient is for exposure to dust that may be generated during product transfer and handling.
 - Solid Manganese: 0.35-1.00mm is formulated for use in water purification. Health effects resulting from this product being used for any other purpose of process is not addressed in the material safety data sheet.
 - NTP Class 2A: Reasonably anticipated to be a carcinogen limited evidence of carcinogenicity from studies in humans.
 - IARC Group 2A: Probably carcinogenic to humans.
 - NIOSH considers crystalline silica to be a potential occupational carcinogen as defined by the OSHA carcinogen policy [29 cfr 1990].

8.2. Exposure controls

- Appropriate engineering controls : If user operations generate dust, fume, or mist, use ventilation to keep exposure to airborne contaminants below the exposure limits in this section.
- Personal protective equipment : Eye & Face Protection, Skin Protection, Respiratory Protection



- Eye protection : Corrosive to eyes. Wear protective safety goggles when dust generation is likely
- Skin protection : Wear clothing sufficient to cover the skin, safety shoes, and leather gloves for hand protections against dry material.
- Respiratory protection : Use NIOSH.MSHA approved respiratory protection (air-purifying or air supply) 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.
- General hygiene considerations : Wash thoroughly after using product. Wash contaminated clothing. Wash hands before eating or drinking.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

- Appearance : A uniform, brownish-black, granular material
- Odor Threshold : Odorless
- pH : 6.5-7.5 (10% aqueous slurry)

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Melting Point/Freezing Point	: >2700°F/Solid at STP
Initial Boiling Point/Range	: Not applicable
Flash Point	: Not applicable
Evaporation Rate	: Not applicable
Upper/Lower Flammability or Explosive Limit	: Not applicable (upper); Not applicable (lower)
Vapor Pressure	: Not applicable
Vapor Density (air = 1)	: Not applicable
Relative Density (water = 1)	: 88 lbs/ft ³
Solubility	: Not applicable
Auto-ignition Temperature	: Not self-igniting

9.2. Other information

Physical State : Solid

SECTION 10: Stability and reactivity

10.1. Reactivity

Material is flammable by chemical reaction. Keep away from heat and flammable materials

10.2. Chemical stability

Stable under normal conditions of storage

10.3. Possibility of hazardous reactions

None under normal circumstances

10.4. Conditions to avoid

Manganese dioxide (MnO₂) is a powerful oxidizer, hence it should not be heated with organic matter or other easily oxidizing substances, e.g. sulfur, sulfides, phosphides, hypophosphides, etc.

10.5. Incompatible materials

Incompatible with hydrogen peroxide and sodium peroxide

10.6. Hazardous decomposition products

Not produced under normal circumstances

SECTION 11: Toxicological information

11.1. Information on toxicological effects

RTECS toxicity data for product components:

Chemical Name	CAS No.	RTECS toxicity data
Quartz (SiO ₂)	14808-60-7	<p>Acute Inhalation: Human LC Lo Dose: 300 ug/m³/10Y-1; toxic Effects: Liver- Other changes; Human TC Lo Dose: 16 mppcf/8H/17, 9Y-1; Toxic Effects: Lungs, thorax of Respiration-Fibrosis, focal (pneumoconiosis); Lungs, Thorax of Respiration – Cough; Lungs, Thorax of Respiration – Dyspnea.</p> <p>Chronic (Multiple Dose) Inhalation: Rat Dose: 80 mg/m³/28w-1; Toxic Effects: Lungs, Thorax of Respiration – Fibrosis, focal (pneumoconiosis); Blood-Changes in spleen. Rat Dose: 108 mg/m³/6H/3D-1; Toxic Effects: Biochemical – Other oxidoreductases;</p> <p>Biochemical – Other Proteins: Rat Dose: 58 mg/m³/13W-1; Toxic Effects: Lungs, Thorax of Respiration – Other changes: Endocrine – Changes in thymus weight; blood-Changes in leukocyte (WBC) cell count. Rat Dose: 4932 mg/m³/8H21W-1; Toxic Effects: Endocrine – Changes in spleen weight.</p> <p>Immunological including allergic – Decrease in humoral</p>

		<p>immune response. Rat Dose: 20 mg/m³/3E-1; Toxic Effects: lungs, Thorax of Respiration – Other changes; Lungs, Thorax of Respiration – Changes in Lung weight.</p> <p>Biomedical – Other enzymes. Mutagenic: Human Micronucleus Test: Cell Type: lung, Dose 40 mg.cm². Hamster Micronucleus Test: Cell type: lung; Dose 50 mg/cm². Tumorigenic: Rat Route: Inhalation: Dose 50 mg/m³/6H/71W-1: Toxic Effects: Tumorigenic – Carcinogenic by RTECS, criteria: Liver, Tumors, Rat Route: Intravenous: Dose: 50 mg/kg: Toxic Effects: Tumorigenic – Equivocal tumorigenic agent by RTECS criteria; Blood – Lymphoma including Hodgkin's disease.</p>
Manganese Dioxide (MnO ₂)	1313-13-9	<p>Acute Dermal: Mouse LD 50 Route; Subcutaneous Dose: 422 mg/kg</p> <p>Chronic (Multiple Dose) Inhalation: Rat Dose: 1800 ug/m³/24H/35D-C; Toxic Effects: Brain and coverings – Recordings from specific areas of CNS;</p> <p>Biochemical – Changes in serum composition; Biochemical – True cholinesterase</p> <p>Reproductive/Teratogenic: Mouse Route: Inhalation; Dose: 49 mg/m³7H; Duration: female 75D prior to mating effects on Newborn – Growth statistics; Behavioral</p>
Nonhazardous Ingredients / Inert Materials / Proprietary	N/A	N/A

SECTION 12: Ecological information

Not classified as hazardous to the aquatic environment. The information on toxicity or other environmental effects is not relevant for the product itself as it is an insoluble material. Toxicity values are provided for the critical constituent Manganese dioxide (MnO₂)

12.1. Toxicity

Aquatic toxicity/Short term toxicity:

Fish (mortality), *Oncorhynchus mykiss*, LC50 (96 h): > 100% v/v saturated solution (OECD 203)

Aquatic invertebrates (immobilization), *Daphnia magna*, EC50 (48 h): >100% v/v saturated solution (OECD 202)

Aquatic invertebrates (immobilization), *Daphnia magna*, EC50 (48 h), EC50 (48h): >0.0735 mg/l as test item test (MnO₂)

Algae (growth rate), *Pseudokirchneriella subcapitata*, EC50 (72 h): >100% v/v saturated solution (OECD 201)

Long term toxicity:

Aquatic invertebrates (reproduction), *Ceriodaphnia dubia*, NOEC (8 d): 10% v/v saturated solution dissolved mg/l (OECD 211)

Toxicity to micro-organisms:

Activated sludge respiration inhibition, NOEC (3 h): 1000 mg/l

12.2. Persistence and degradability

Biodegeneration or hydrolysis is not relevant as the product is inorganic solid material and insoluble in water

12.3. Bio accumulative potential

Not relevant information as the product is inorganic solid material and insoluble in water. Manganese in

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the product is an essential trace nutrient in animals and for the photosynthetic process in plants. Hence unacceptable bioaccumulation is highly unlikely to occur in any organism due to their ability to regulate intake and loss from natural sources

12.4. Mobility in soil

Not relevant information as the product is inorganic solid material and insoluble in water

12.5. Results of PBT and vPvB assessment:

Assessment is not applicable for inorganic substances

12.6. Other adverse effects

No reason for any hazard classification under CLP or DSD for atmospheric environment (the ozone layer)

SECTION 13: Disposal considerations

13.1. Waste Treatment Methods

RCRA: This product as manufactured is not a RCRA listed hazardous waste and does not exhibit any characteristics of a hazardous waste, including toxicity (by EPA TCLP method)

Disposal method: This product is generally suitable for landfill disposal. Follow all applicable Federal, State, and Local laws, rules and regulations regarding the proper disposal of this material. If this product has been altered or contaminated with other hazardous materials, appropriate waste analysis may be necessary to determine the proper method of disposal. A qualified environmental professional should determine waste characterization, disposal, and treatment methods for this material in accordance with applicable Federal, State, and Local regulations and requirements.

SECTION 14: Transport information

14.1. In accordance with DOT: This product is not regulated by USDOT as a hazardous material (49 CFR part 172.101). No placard required for transportation.

14.2. In accordance with IMDG: Not regulated as dangerous goods.

14.3. In accordance with IATA: Not regulated as dangerous goods.

14.4. Transport in bulk according to AnnexII of MARPOL 73/78 and the IBD code: N/A

SECTION 15: Regulatory information

15.1. US Federal regulations

Chemical Name	CAS No.	Federal				
		RCRA	CERCLA	SARA	SARA EHS	TSCA
Quartz (SiO ₂)	14808-80-7	No	No	No	No	Yes
Manganese Dioxide (MnO ₂)	1313-13-9	No	Yes ¹	Yes (as compound)	No	Yes
Nonhazardous Ingredients / Inert Materials / Proprietary	N/A	No	No	No	No	No

Notes:

1. Listed as Compound per CAA Section 112
2. Lister per CWA Section 307(a) RQ: 10 lb. (4.535 kg)
3. Listed as compound

15.2. US State Regulations:

Chemical Name	CAS No.	State (Right-to-know)			
		PA	NJ	MA	CA
Quartz (SiO ₂)	14808-80-7	Yes	No	Yes	No

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Manganese Dioxide (MnO ₂)	1313-13-9	No	No	No	No
Nonhazardous Ingredients / Inert Materials / Proprietary	No	No	No	No	No

SECTION 16: Other information

Health

- 0 - Normal Material
- 1 - Slightly Hazard / Significant Irritation
- 2 - Hazardous / Temporary incapacitation or residual injury
- 3 - Extreme Danger / Serious or permanent injury
- 4 - Deadly

HMIS (NPCA)	
Health	2
Flammability	0
Reactivity	1
Personal Protection	E

Reactivity

- 0 - Stable
- 1 - Unstable under heat or pressure
- 2 - Violent chemical change under heat or pressure
- 3 - Shock and heat may detonate
- 4 - Capable of detonation or explosion

Flammability

- 0 - Will not burn
- 1 - Must be preheated before ignition will occur (Flash point greater than 200°F)
- 2 - Must be moderately heated before ignition will occur (Flash point 100°F to 200°F)
- 3 - Can be ignited under almost all ambient temperatures (Flash point 73°F to 100°F)
- 4 - Will rapidly or completely vaporize at atmospheric pressure and normal ambient temperature, or will burn readily when dispersed in air (Flash point below 73°F)

Personal Protection

- A - Safety Glasses
- B - Safety Glasses + Gloves
- C - Safety Glasses + Gloves + Apron
- D - Face Shield + Gloves + Apron
- E - Safety Glasses + Gloves + Dust Respirator
- F - Safety Glasses + Gloves + Apron + Dust Respirator
- G - Safety Glasses + Gloves + Vapor Respirator
- H - Splash Goggles + Gloves + Apron + Vapor Respirator
- I - Safety Glasses + Gloves + Dust and Vapor Respirator
- J - Splash Goggles + Gloves + Apron + Dust and Vapor Respirator
- K - Air Line Hood or Mask + Gloves + Full Suit Boots
- X - Ask supervisor or safety specialist for handling instructions

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