

SAFETY DATA SHEET

Section 1 Identification

Product Name: Standard and Mini Prilled Sucra-Min Manganese Sucrate 35% Mn

Recommended use: Soil Enhancer

Not Recommended: Use only as directed.

Manufacturer: Art Wilson Company dba Arcosa Specialty Materials
P.O. Box 20160
Carson City, NV 89721

Telephone: (775) 882-0700

Date of Preparation: April 11, 2017

Section 2. Hazard Identification

Classification: Not classified as hazardous

Labeling: Not Required

Section 3. Composition / Information On Ingredients

| Chemical name | CAS No. | Concentration |
|------------------|-----------|---------------|
| Manganese Oxide* | 1313-13-9 | 90-95% |
| Calcium Sulfate | 7778-18-9 | 5-10% |

* The manganese oxide in this product is inextricably bound in a manner that no exposure by inhalation occurs during normal use and handling. Therefore this product is not classified as a Specific Target Organ Repeated Exposure Category 2.

The specific identity and/or exact concentration has been withheld as a trade secret.

4. First-Aid Measures

Inhalation: If irritation develops, remove to fresh air. Get medical attention.

Skin contact: First aid is not normally required. Wash skin with soap and water. Get medical attention if irritation develops or persists. Remove contaminated clothing and launder before reuse.

Eye contact: Flush with plenty of water, holding the eyelids apart to ensure thorough washing. Get medical attention if irritation persists.

Ingestion: Rinse mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention.

Most important symptoms/effects, acute and delayed: Dust may cause mechanical eye and skin irritation. Inhalation of dust may cause respiratory irritation, coughing and difficulty in breathing. May cause metal fume fever. Symptoms include shivering, fever, malaise and muscular pain. Absorption of manganese compounds from the gastrointestinal tract is poor. Ingestion may cause gastrointestinal irritation and nausea. Prolonged

overexposure to manganese oxide may cause effects on the lungs and central nervous system, resulting in increased susceptibility to bronchitis, pneumonitis and neurologic, neuropsychiatric disorders (manganese poisoning).

Indication of immediate medical attention and special treatment, if necessary: None required under normal conditions of use.

Section 5. Fire-Fighting Measures

Suitable (and unsuitable) extinguishing media: Use media appropriate for the surrounding fire.

Specific hazards arising from the chemical: Manganese oxide is not flammable or combustible but will decompose at extreme temperatures producing manganese (III) oxide and oxygen which will support combustion.

Special protective equipment and precautions for fire-fighters: Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing.

Section 6. Accidental Release Measures

Personal precautions, protective equipment, and emergency procedures: Wear appropriate protective equipment. Avoid creating and breathing dust.

Environmental hazards: Report releases as required by local and federal authorities.

Methods and materials for containment and cleaning up: Collect and place in appropriate container for use or disposal.

7. Handling and Storage

Precautions for safe handling: Avoid contact with eyes, skin and clothing. Do not breathe dust. Wear protective clothing and equipment as described in Section 8. Wash thoroughly with soap and water after use.

Conditions for safe storage, including any incompatibilities: Store in a cool, dry, well-ventilated area. Protect from physical damage.

Section 8. Exposure Controls / Personal Protection

Exposure guidelines:

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|-----------------|---|
| Manganese Oxide | 0.02 mg/m ³ TWA(respirable), 0.1 mg/m ³ TWA (inhalable) ACGIH TLV |
| Calcium Sulfate | 5 mg/m ³ TWA (respirable), 10 mg/m ³ TWA OSHA PEL (total dust) 10 mg/m ³ TWA ACGIH TLV (inhalable fraction) |

Appropriate engineering controls:

Engineering Controls: Use with adequate general or local exhaust ventilation to maintain exposures below the occupational exposure limits.

Individual protection measures, such as personal protective equipment:

Respiratory protection: If the exposure limits are exceeded a NIOSH approved particulate respirator appropriate for the form and concentration of the contaminants should be used. Selection and use of respiratory

equipment must be in accordance with OSHA 1910.134 or other applicable regulations and good industrial hygiene practice.

Skin protection: Abrasive resistant gloves are recommended if needed to avoid skin contact.

Eye protection: Chemical safety glasses with sideshields are recommended to avoid eye contact.

Other: None required.

Section 9. Physical and Chemical Properties

Appearance: Black pellets

Odor: Odorless

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|---|--|
| Odor threshold: Not applicable | pH: Not applicable |
| Melting Point/Freezing Point: 842°F / 450°C (manganese oxide) | Boiling point: Not applicable |
| Flash point: Not applicable | Evaporation rate: Not applicable |
| Flammability (solid, gas): Not flammable | |
| Flammable limits: LEL: Not applicable | UEL: Not applicable |
| Vapor pressure: Not applicable | Vapor density: Not applicable |
| Relative density: 5.21 (manganese oxide) | Solubility in Water: Negligible (0.073 mg/L) (manganese oxide) |
| Partition coefficient: n-ctanol/water: Not applicable | Auto-ignition temperature: Not applicable |
| Decomposition Temperature: 995°F (535°C) | Viscosity: Not applicable |

Section 10. Stability and Reactivity

Reactivity: None known.

Chemical stability: Stable under normal conditions.

Possibility of hazardous reactions: Temperatures above 995°F will cause the product to decompose producing oxygen which will intensify the fire.

Conditions to avoid: Reacts with extreme heat to produce oxygen. Avoid intense heat and fire.

Incompatible materials: Avoid organic materials, combustible materials, reducing agents, oxidizing agents, aluminum, azides, chlorates and halogens.

Hazardous decomposition products: Thermal decomposition may produce manganese oxide (III) and oxygen.

Section 11. Toxicological Information

Likely routes of exposure:

Inhalation: None expected under normal conditions of use. Inhalation of dust may cause irritation to the nose, throat and upper respiratory tract with coughing and shortness of breath. May cause metal fume fever, which is characterized by flu-like symptoms with metallic taste, fever, chills, chest pain, fatigue and muscle pain. Symptoms generally resolve in 24-48 hours. May also cause emphysema and acute pulmonary edema.

Ingestion: Absorption of manganese compounds from the gastrointestinal tract is poor under normal use conditions. Swallowing may cause abdominal pain and nausea.

Skin contact: Prolonged skin contact may cause mechanical irritation and abrasions.

Eye contact: Dust may cause mechanical irritation, tearing and pain.

Chronic effects: None expected under normal conditions of use. Overexposure to manganese oxide may cause manganese poisoning. Symptoms include headache, apathy, anorexia, euphoria, impulsiveness, insomnia, leg cramps; sexual excitement, followed by impotence and speech disturbances with slow & difficult articulation.

Germ Cell Mutagenicity: This product is not expected to cause germ cell mutagenicity.

Developmental / Reproductive Toxicity: A single dose of manganese dioxide (250 mg/kg) in rabbits caused severe degenerative changes in the seminiferous tubules and these effects led to sterility. The significance of this finding to humans has not been determined.

Carcinogenicity: None of the components are listed as a carcinogen by OSHA, NTP or IARC.

Acute Toxicity Values:

Manganese Oxide: Oral rat LD50 3197 mg/kg, Inhalation rat LC50 >1500 mg/m³, Dermal rat LD50 2000 mg/kg.
Calcium Sulfate: Oral rat LD50 >2000 mg/kg, Inhalation rat LC50 >3.26 mg/L/4 hr

Section 12. Ecological Information

Ecotoxicity:

Manganese Oxide: 96 hr LC50 *Oryzias latipes* >100 mg/L, 48 hr EC50 *daphnia magna* >100 mg/L, 72 hr *Pseudokirchneriella subcapitata* >100 mg/L
Calcium Sulfate: No data available

Persistence and degradability: Biodegradation is not applicable for inorganic substances. **Bioaccumulative potential:** This product is not expected to bioaccumulate.
Mobility in soil: No data available **Other adverse effects:** None known.

Section 13. Disposal Considerations

Dispose in accordance with all local, state and federal regulations.

Section 14. Transport Information

| | UN Number | Proper shipping name | Hazard Class | Packing Group | Environmental Hazard |
|------|-----------|----------------------|--------------|---------------|----------------------|
| DOT | | Not Regulated | | | |
| TDG | | Not Regulated | | | |
| IMDG | | Not Regulated | | | |
| IATA | | Not Regulated | | | |

Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code): Not applicable

Special precautions: None known.

Section 15. Regulatory Information

Safety, health, and environmental regulations specific for the product in question.

CERCLA Section 103: This product is not subject to CERCLA spill reporting requirements. Many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

SARA Hazard Category (311/312): Not hazardous

EPA SARA 313: This Product Contains the Following Chemicals Subject to Annual Release Reporting Requirements Under SARA Title III, Section 313 (40 CFR 372): None

US TSCA: All of the components of this material are listed on the Toxic Substances Control Act (TSCA) Chemical Substances Inventory or are exempt.

California Proposition 65: This product contain the following chemicals known to the State of California to cause cancer or reproductive toxicity: None

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| Section 16. Other Information |
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NFPA Rating: Health = 1 Flammability = 0 Instability = 0
HMIS Rating: Health = 1 Flammability = 0 Physical Hazard = 0

SDS Revision History: All Section revised - Update to GHS format

Date of preparation: April 11, 2017

Date of last revision: None