Printing date 06/14/2024

Reviewed on 06/14/2024

1 Identification

- · Product identifier
- · Trade name: Manganese Dioxide 85% Laboratory Grade, Powder
- Article number: M0975
- CAS Number: 1313-13-9
- *EC number*:
- 215-202-6 • Index number:
- 025-001-00-3
- Details of the supplier of the safety data sheet
 Manufacturer/Supplier: Aqua Solutions, Inc.
 6913 Highway 225 DEER PARK, TX 77536 USA
 800-256-2586
- Information department: Technical Coordinator Sherman Nelson shermann@aquasolutions.org Technical Coordinator Sherman Nelson shermann@aquasolutions.org
 Emergency telephone number: Chemtrec: 800-424-9300 Canutec: 613-996-6666

2 Hazard(s) identification

· Classification of the substance or mixture



Acute Toxicity - Oral 4H302 Harmful if swallowed.Acute Toxicity - Inhalation 4H332 Harmful if inhaled.

· Label elements

• *GHS label elements* The substance is classified and labeled according to the Globally Harmonized System (GHS). • *Hazard pictograms*



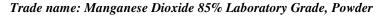
Signal word Warning
Hazard statements
Harmful if swallowed or if inhaled.

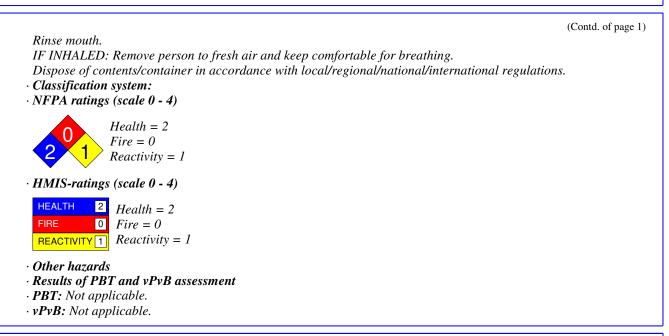
Precautionary statements
Avoid breathing dust/fume/gas/mist/vapors/spray
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
If swallowed: Call a poison center/doctor if you feel unwell.

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3 Composition/information on ingredients

- Chemical characterization: Substances • CAS No. Description
- CAS: 1313-13-9 Manganese Dioxide
- · Identification number(s)
- EC number: 215-202-6
- Index number: 025-001-00-3

4 First-aid measures

- · Description of first aid measures
- General information:

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

• After inhalation:

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist. In case of unconsciousness place patient stably in side position for transportation.

- After skin contact: Generally the product does not irritate the skin.
- · After eye contact: Rinse opened eye for several minutes under running water.
- · After swallowing: Immediately call a doctor.
- Information for doctor:

· Most important symptoms and effects, both acute and delayed No further relevant information available.

· Indication of any immediate medical attention and special treatment needed

No further relevant information available.

5 *Fire-fighting measures*

- · Extinguishing media
- Suitable extinguishing agents: Use fire fighting measures that suit the environment.
- · Special hazards arising from the substance or mixture No further relevant information available.

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- · Advice for firefighters
- · Protective equipment: Mouth respiratory protective device.

6 Accidental release measures

- · Personal precautions, protective equipment and emergency procedures Not required.
- · Environmental precautions: Do not allow to enter sewers/ surface or ground water.
- · Methods and material for containment and cleaning up: Ensure adequate ventilation.
- · Reference to other sections
- See Section 7 for information on safe handling.
- See Section 8 for information on personal protection equipment.
- See Section 13 for disposal information.
- · Protective Action Criteria for Chemicals
- **PAC-1:** 4.7 mg/m³
- **PAC-2:** 7.9 mg/m³
- **PAC-3:** 690 mg/m³

7 Handling and storage

· Handling:

- Precautions for safe handling
- Thorough dedusting.
- Ensure good ventilation/exhaustion at the workplace.
- Information about protection against explosions and fires: No special measures required.
- · Conditions for safe storage, including any incompatibilities
- · Storage:
- Requirements to be met by storerooms and receptacles: No special requirements.
- Information about storage in one common storage facility: Not required.
- Further information about storage conditions: Keep receptacle tightly sealed.
- · Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

- Additional information about design of technical systems: No further data; see section 7.
- · Control parameters

· Components with I	limit values that	reauire mo	nitoring at th	ie workplace:
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CAS:	1313-13-9 Mang	anese Dioxide
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- PEL Ceiling limit value: 5 mg/m³ as Mn
- REL Short-term value: 3 mg/m³ Long-term value: 1 mg/m³ as Mn
- *TLV* Long-term value: 0.02* 0.1** mg/m³ as Mn; A4, *respirable **inhalable fraction

• Additional information: The lists that were valid during the creation were used as basis.

· Exposure controls

· Personal protective equipment:

• General protective and hygienic measures: Wash hands before breaks and at the end of work.

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· Breathing equipment:

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

· Protection of hands:

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation • Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

• **Penetration time of glove material** The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

• Eye protection: Not required.

· Body protection: Protective work clothing

9 Physical and chemical properties

· Information on	basic physical	and chemical	l properties
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General Information	
Appearance:	
Form:	Powder
Color:	Dark grey
Odor:	<i>Odorless</i>
Odor threshold:	Not determined.
pH-value:	Not applicable.
Change in condition	
Melting point/Melting range:	535 °C (995 °F)
Boiling point/Boiling range:	Undetermined.
Flash point:	Not applicable.
Flammability (solid, gaseous):	Product is not flammable.
Decomposition temperature:	Not determined.
Ignition temperature:	Not determined.
Danger of explosion:	Product does not present an explosion hazard.
Explosion limits:	
Lower:	Not determined.
Upper:	Not determined.
Vapor pressure:	Not applicable.
Density at 20 °C (68 °F):	5.026 g/cm ³ (41.94197 lbs/gal)
Relative density	Not determined.
Vapor density	Not applicable.
Evaporation rate	Not applicable.
Solubility in / Miscibility with	
Water:	Not determined.
Partition coefficient (n-octanol/wat	ter): Not determined.
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· Viscosity: Dynamic: Kinematic:

Not applicable. Not applicable.

· Other information

No further relevant information available.

10 Stability and reactivity

· Reactivity No further relevant information available.

- · Chemical stability
- Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
- · Possibility of hazardous reactions No dangerous reactions known.
- \cdot Conditions to avoid No further relevant information available.
- · Incompatible materials: No further relevant information available.
- · Hazardous decomposition products: No dangerous decomposition products known.

11 Toxicological information

· Information on toxicological effects

• Acute toxicity:

· LD/LC50 values that are relevant for classification:

Oral LD50 500 mg/kg (ATE)

Inhalative LC50/4h 1.5 mg/l (ATE)

· Primary irritant effect:

• on the skin: No irritant effect.

- on the eye: No irritating effect.
- Sensitization: No sensitizing effects known.
- · Additional toxicological information:
- · Carcinogenic categories
- · IARC (International Agency for Research on Cancer) Substance is not listed.
- · NTP (National Toxicology Program) Substance is not listed.
- · OSHA-Ca (Occupational Safety & Health Administration) Substance is not listed.

12 Ecological information

- · Toxicity
- Aquatic toxicity: No further relevant information available.
- · Persistence and degradability No further relevant information available.
- · Behavior in environmental systems:
- · Bioaccumulative potential No further relevant information available.
- · Mobility in soil No further relevant information available.
- · Additional ecological information:
- · General notes:
- Water hazard class 2 (Assessment by list): hazardous for water
- Do not allow product to reach ground water, water course or sewage system.
- Danger to drinking water if even small quantities leak into the ground.
- · Results of PBT and vPvB assessment
- *PBT:* Not applicable.

• **vPvB:** Not applicable.

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· Other adverse effects No further relevant information available.

13 Disposal considerations

· Waste treatment methods

· Recommendation:

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

- · Uncleaned packagings:
- · Recommendation: Disposal must be made according to official regulations.

4 Transport information	
· UN-Number	Not regulated
· DOT, ADN, IMDG, IATA	Not regulated
· UN proper shipping name · DOT, ADN, IMDG, IATA	Not regulated
· Transport hazard class(es)	
· DOT, ADN, IMDG, IATA · Class	Not regulated
· Packing group · DOT, IMDG, IATA	Not regulated
· Environmental hazards: · Marine pollutant:	No
· Special precautions for user	Not applicable.
• Transport in bulk according to Annex . MARPOL73/78 and the IBC Code	II of Not applicable.
· UN "Model Regulation":	Not regulated

15 Regulatory information

• Safety, health and environmental regulations/legislation specific for the substance or mixture No further relevant information available.

· Sara

- · Section 355 (extremely hazardous substances): Substance is not listed.
- · Section 313 (Specific toxic chemical listings): Substance is listed.
- TSCA (Toxic Substances Control Act): ACTIVE
- · Hazardous Air Pollutants Substance is listed.

· Proposition 65

- · Chemicals known to cause cancer: Substance is not listed.
- · Chemicals known to cause reproductive toxicity for females: Substance is not listed.
- · Chemicals known to cause reproductive toxicity for males: Substance is not listed.
- · Chemicals known to cause developmental toxicity: Substance is not listed.

· Carcinogenic categories

- · EPA (Environmental Protection Agency) D
- TLV (Threshold Limit Value) Substance is not listed.

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NIOSH-Ca (National Institute for Occupational Safety and Health) Substance is not listed.
 GHS label elements The substance is classified and labeled according to the Globally Harmonized System (GHS).
 Hazard pictograms



· Signal word Warning

· Hazard statements

Harmful if swallowed or if inhaled.

· Precautionary statements

Avoid breathing dust/fume/gas/mist/vapors/spray

Wash thoroughly after handling.

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

Use only outdoors or in a well-ventilated area.

If swallowed: Call a poison center/doctor if you feel unwell.

Rinse mouth.

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

- Dispose of contents/container in accordance with local/regional/national/international regulations.
- Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· Department issuing SDS: Environment protection department.

· Contact:

Date of Preparation / Last Revision: Date of preparation / last revision Revision 0.1, 06/14/2024: Reviewed SDS for accuracy. MH/STN Revision 0.0, 05-29-2024: Creation date for SDS. STN 06/14/2024 / 1.2 Abbreviations and acronyms: IMDG: International Maritime Code for Dangerous Goods DOT: US Department of Transport Association IATA: International Air Transport Association EINECS: European Inventory of Existing Commercial Chemical Substances CAS: Chemical Abstracts Service (division of the American Chemical Society) NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

LC50: Lethal concentration, 50 percent

- LD50: Lethal dose, 50 percent
- PBT: Persistent, Bioaccumulative and Toxic
- vPvB: very Persistent and very Bioaccumulative NIOSH: National Institute for Occupational Safety
- OSHA: Occupational Safety & Health
- TLV: Threshold Limit Value
- PEL: Permissible Exposure Limit
- REL: Recommended Exposure Limit
- Acute Toxicity Oral 4: Acute toxicity Category 4
- \cdot * Data compared to the previous version altered.

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