

SAFETY DATA SHEET

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SECTION 1. IDENTIFICATION

Product Identifier: (3N) 99.9% Manganese Shavings

Product Code: MN-M-03-SHVS

CAS Number: 7439-96-5

Relevant identified uses of the substance: Scientific research and development

Supplier details:

American Elements 10884 Weyburn Ave. Los Angeles, CA 90024 Tel: +1 310-208-0551 Fax: +1 310-208-0351 Emergency telephone number: +1 800-424-9300

SECTION 2. HAZARDS IDENTIFICATION

Classification of the substance or mixture The substance is not classified according to the Globally Harmonized System (GHS). Classification according to Directive 67/548/EEC or Directive 1999/45/EC N/A Information concerning particular hazards for human and environment: N/A Label elements Labelling according to EU guidelines: Observe the general safety regulations when handling chemicals Classification system HMIS ratings (scale 0-4) (Hazardous Materials Identification System) Health (acute effects) = 0Flammability = 0Reactivity = 0Other hazards Results of PBT and vPvB assessment PBT: N/A vPvB: N/A

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances CAS No. / Substance Name: 7439-96-5 Manganese Identification number(s): EC number: 231-105-1

SECTION 4. FIRST AID MEASURES

Description of first aid measures General information No special measures required. If inhaled: Seek medical treatment in case of complaints. In case of skin contact: Generally the product does not irritate the skin. In case of eye contact: Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor. If swallowed: If symptoms persist consult doctor. Information for doctor Most important symptoms and effects, both acute and delayed No data available Indication of any immediate medical attention and special treatment needed No data available

SECTION 5. FIREFIGHTING MEASURES

Extinguishing media Suitable extinguishing agents Special powder for metal fires. Do not use water. For safety reasons unsuitable extinguishing agents Water Special hazards arising from the substance or mixture In case of fire, the following can be released: Metal oxide fume Advice for firefighters Protective equipment: No special measures required.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures Not required. Environmental precautions: Do not allow material to be released to the environment without official permits. Methods and materials for containment and cleanup: Pick up mechanically. 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.

SECTION 7. HANDLING AND STORAGE

Handling Precautions for safe handling Keep container tightly sealed. Store in cool, dry place in tightly closed containers. Information about protection against explosions and fires: No special measures required. Conditions for safe storage, including any incompatibilities Requirements to be met by storerooms and receptacles: No special requirements. Information about storage in one common storage facility: No data available Further information about storage conditions: Keep container tightly sealed. Store in cool, dry conditions in well-sealed containers. Specific end use(s) No data available

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters Components with limit values that require monitoring at the workplace: 7439-96-5 Manganese (100.0%)

PEL () Short-term value: C 5* ** mg/m³ as Mn *and inorganic compounds **fume

REL () Short-term value: 3* ** mg/m³

Long-term value: 1* ** mg/m³ as Mn *and inorganic compounds **fume

TLV () (0.2) NIC-0.02* NIC-0.2* mg/m³ as Mn;+ inorg. comp.;*resp.,**inh. fraction:NIC-A4 Additional information: No data Exposure controls Personal protective equipment Follow typical protective and hygienic practices for handling chemicals. Breathing equipment: Not required. Protection of hands: Not required. Eye protection: Safety glasses Body protection: Protective work clothing.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties Appearance: Form: Solid in various forms Color: Grey Odor: No data available Odor threshold: No data available. pH: N/A Melting point/Melting range: 1246°C (2275 °F) Boiling point/Boiling range: 2095°C (3803 °F) Sublimation temperature / start: No data available Flammability (solid, gas) No data available. Ignition temperature: No data available Decomposition temperature: No data available Autoignition: No data available. Explosion limits: Lower: No data available Upper: No data available Vapor pressure at 20°C (68 °F): 0 hPa

Density at 20°C (68 °F): 7.3 g/cm³ (60.919 lbs/gal) Relative density No data available. Vapor density N/A Evaporation rate N/A Segregation coefficient (n-octonol/water): No data available. Viscosity: Dynamic: N/A Kinematic: N/A Other information No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity Chemical stability Thermal decomposition / conditions to be avoided: Decomposition will not occur if used and stored according to specifications. Possibility of hazardous reactions No dangerous reactions known Incompatible materials: No data available Hazardous decomposition products: Metal oxide fume

SECTION 11. TOXICOLOGICAL INFORMATION

Information on toxicological effects

Acute toxicity:

Primary irritant effect:

on the skin: Powder: irritant effect

on the eye: Powder: irritant effect

Sensitization: No sensitizing effects known.

Additional toxicological information:

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known. EPA-D: Not classifiable as to human carcinogenicity: inadequate human and animal evidence of carcinogenicity or no data are available.

The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute and/or other multiple dose toxicity data for components in this product.

The Registry of Toxic Effects of Chemical Substances (RTECS) contains reproductive and/or mutation data for components in this product.

The Registry of Toxic Effects of Chemical Substances (RTECS) contains tumorigenic and/or carcinogenic and/or neoplastic data for components in this product.

SECTION 12. ECOLOGICAL INFORMATION

Toxicity Acquatic toxicity: No data available Persistence and degradability No data available Behavior in environmental systems: Bioaccumulative potential No data available Mobility in soil No data available Additional ecological information: General notes: Do not allow undiluted product or large quantities of it to reach groundwater, water courses, or sewage systems. Do not allow material to be released to the environment without official permits.Results of PBT and vPvB assessment PBT: N/A vPvB: N/A Other adverse effects No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Waste treatment methods Recommendation Consult official regulations to ensure proper disposal. Uncleaned packagings: Recommendation: Disposal must be made according to official regulations.

SECTION 14. TRANSPORT INFORMATION

UN-Number DOT, ADR, ADN, IMDG, IATA N/A UN proper shipping name DOT, ADR, ADN, IMDG, IATA N/A Transport hazard class(es) DOT, ADR, ADN, IMDG, IATA Class N/A Packing group DOT, ADR, IMDG, IATA N/A Environmental hazards: Marine pollutant: No Special precautions for user N/A Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code N/A

SECTION 15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture Product related hazard informations:

Observe the general safety regulations when handling chemicals

National regulations

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

All components of this product are listed on the Canadian Domestic Substances List (DSL). Information about limitation of use:

For use only by technically qualified individuals.

This product is subject to the reporting requirements of section 313 of the Emergency Planning and Community Right to Know Act of 1986 and 40CFR372. Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16. OTHER INFORMATION

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH). The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. American Elements shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. COPYRIGHT 1997-2022 AMERICAN ELEMENTS. LICENSED GRANTED TO MAKE UNLIMITED PAPER COPIES FOR INTERNAL USE ONLY.