

# SAFETY DATA SHEET

Date Printed: 05/10/2024

Date Revised: 01/15/2022

## SECTION 1. IDENTIFICATION

**Product Identifier:** (4N) 99.99% Manganese Carbide Mn<sub>5</sub>C<sub>2</sub>

**Product Code:** MN-C-04

**CAS Number:** 12071-17-9

**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

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Flammable solids Category 2

Serious Eye Damage/Eye Irritation Category 2

Label Elements

Signal Word:

Warning

Hazard Statements:

Flammable solid

Causes serious eye irritation



Precautionary Statements

Prevention:

Wash face, hands and any exposed skin thoroughly after handling

Keep away from heat/sparks/open flames/hot surfaces. - No smoking

Ground/bond container and receiving equipment

Use explosion-proof electrical/ventilating/lighting/equipment

Wear protective gloves/protective clothing/eye protection/face protection

Eyes:

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

If eye irritation persists: Get medical advice/attention

Fire:

In case of fire: Use CO<sub>2</sub>, dry chemical, or foam for extinction

Hazards not otherwise classified (HNOC)

None identified

---

### **SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

Component:

Manganese 7439-96-5

Carbon 7440-44-0

---

### **SECTION 4. FIRST AID MEASURES**

Eye Contact:

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

Skin Contact:

Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Obtain medical attention.

Inhalation:

Remove from exposure, lie down. Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Obtain medical attention.

Ingestion:

Clean mouth with water. Get medical attention.

Most important symptoms and effects:

No information available.

Notes to Physician:

Treat symptomatically

---

### **SECTION 5. FIREFIGHTING MEASURES**

Suitable Extinguishing Media: Dry chemical.

Unsuitable Extinguishing: Media No information available

Flash Point No information available

Method - No information available

Autoignition Temperature

Explosion Limits:

Upper No data available

Lower No data available

Sensitivity to Mechanical Impact No information available

Sensitivity to Static Discharge No

Specific Hazards Arising from the Chemical:

Combustible material

Hazardous Combustion Products:

None known

#### Protective Equipment and Precautions for Firefighters:

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA

Health

2

Flammability

2

Instability

Physical hazards

N/A

---

## SECTION 6. ACCIDENTAL RELEASE MEASURES

#### Personal Precautions:

Ensure adequate ventilation. Use personal protective equipment.

Environmental Precautions: See Section 12 for additional ecological information.

#### Methods for Containment and Clean Up:

Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment. Sweep up or vacuum up spillage and collect in suitable container for disposal.

---

## SECTION 7. HANDLING AND STORAGE

#### Handling:

Avoid contact with skin and eyes. Do not breathe dust. Use explosion-proof equipment. Use only non-sparking tools.

#### Storage:

Keep in a dry, cool and well-ventilated place. Keep container tightly closed. Keep away from heat and sources of ignition. Keep under nitrogen.

---

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Exposure Guidelines

ACGIH TLV:

TWA: 0.02 mg/m<sup>3</sup> TWA: 0.1 mg/m<sup>3</sup>

OSHA PEL:

(Vacated) TWA: 1 mg/m<sup>3</sup> Ceiling: 5 mg/m<sup>3</sup>

(Vacated) STEL: 3 mg/m<sup>3</sup>

(Vacated) Ceiling: 5 mg/m<sup>3</sup>

NIOSH IDLH:

IDLH: 500 mg/m<sup>3</sup> TWA: 1 mg/m<sup>3</sup> STEL: 3 mg/m<sup>3</sup>

Mexico OEL (TWA):

TWA: 0.2 mg/m<sup>3</sup> TWA: 1 mg/m<sup>3</sup> STEL: 3 mg/m<sup>3</sup>

#### Engineering Measures:

Ensure adequate ventilation, especially in confined areas.

#### Personal Protective Equipment

##### Eye/face Protection:

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin and body protection:

Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection:

No protective equipment is needed under normal use conditions.

Hygiene Measures:

Handle in accordance with good industrial hygiene and safety practice.

---

## **SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

Physical State No information available

Appearance No information available

Odor No information available

Odor Threshold No information available

pH No information available

Melting Point/Range No information available

Boiling Point/Range No information available

Flash Point No information available

Evaporation Rate Not applicable

Flammability (solid,gas) No information available

Flammability or explosive limits

Upper No data available

Lower No data available

Vapor Pressure No information available

Vapor Density Not applicable

Specific Gravity No information available

Solubility No information available

Partition coefficient; n-octanol/water No data available

Autoignition Temperature

Decomposition Temperature No information available

Viscosity Not applicable

Molecular Formula Mn<sub>3</sub>C

Molecular Weight No information available

---

## **SECTION 10. STABILITY AND REACTIVITY**

Reactive Hazard: None known, based on information available

Stability: Moisture sensitive.

Conditions to Avoid: Incompatible products. Exposure to moisture.

Incompatible Materials: Acids, Bases, Halogens

Hazardous Decomposition Products: None under normal use conditions

Hazardous Polymerization: Hazardous polymerization does not occur.

Hazardous Reactions: None under normal processing.

---

## **SECTION 11. TOXICOLOGICAL INFORMATION**

Acute Toxicity

Product Information:

Component Information:

Component LD<sub>50</sub> Oral LD<sub>50</sub> Dermal LC<sub>50</sub> Inhalation

Manganese LD<sub>50</sub> = 9 g/kg ( Rat ) Not listed Not listed

Toxicologically Synergistic Products

No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation No information available

Sensitization No information available

Carcinogenicity

IARC: Not listed

NTP: Not listed

ACGIH: Not listed

OSHA: Not listed

Mexico: Not listed

Mutagenic Effects No information available

Reproductive Effects No information available.

Developmental Effects No information available.

Teratogenicity No information available.

STOT - single exposure None known

STOT - repeated exposure None known

Aspiration hazard No information available

Symptoms / effects, both acute and delayed

No information available

Endocrine Disruptor Information

No information available

---

## **SECTION 12. ECOLOGICAL INFORMATION**

Ecotoxicity

Do not empty into drains.

Persistence and Degradability:

Insoluble in water

Bioaccumulation/ Accumulation:

No information available.

Mobility:

Is not likely mobile in the environment due its low water solubility.

---

## **SECTION 13. DISPOSAL CONSIDERATIONS**

Waste Disposal Methods:

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

---

## **SECTION 14. TRANSPORT INFORMATION**

DOT

UN-No UN3089

Hazard Class 4.1

Packing Group III

TDG

UN-No UN3089

Hazard Class 4.1

Packing Group III  
IATA  
UN-No 3089  
Proper Shipping Name METAL POWDER, FLAMMABLE, N.O.S. Hazard Class 4.1  
Packing Group III  
IMDG/IMO  
UN-No 3089  
Proper Shipping Name METAL POWDER, FLAMMABLE, N.O.S. Hazard Class 4.1  
Packing Group III  
1

---

## SECTION 15. REGULATORY INFORMATION

TSCA: X  
DSL: X  
NDSL: -  
EINECS: 231-105-1  
ELINCS: -  
NLP  
PICCS: X  
ENCS: -  
AICS: X  
IECSC: X  
KECL: X  
U.S. Federal Regulations  
TSCA 12(b) Not applicable  
CWA (Clean Water Act) Not applicable  
Clean Air Act  
HAPS Data: X  
Class 1 Ozone Depletors  
Class 2 Ozone Depletors: -  
OSHA:  
Not applicable  
CERCLA Not applicable  
California Proposition 65 This product does not contain any Proposition 65 chemicals  
U.S. State Right-to-Know Regulations  
Component; Manganese  
Massachusetts: X  
New Jersey: X  
Pennsylvania: X  
Illinois: X  
Rhode Island: X  
U.S. Department of Transportation  
Reportable Quantity (RQ): N  
DOT Marine Pollutant N  
DOT Severe Marine Pollutant N  
U.S. Department of Homeland Security  
This product does not contain any DHS chemicals.

---

## 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.