

# SAFETY DATA SHEET

Creation Date 24-Nov-2010

Revision Date 25-Dec-2021

Revision Number 4

## 1. Identification

|                             |  |
|-----------------------------|--|
| <b>Product Name</b>         | <b>Manganese, powder, -325 mesh</b>            |
| <b>CAS No</b>               | 7439-96-5                                      |
| <b>Synonyms</b>             | No information available                       |
| <b>Recommended Use</b>      | Laboratory chemicals.                          |
| <b>Uses advised against</b> | Food, drug, pesticide or biocidal product use. |

### Details of the supplier of the safety data sheet

#### Company

Stanford Advanced Materials

Tel: (949) 407-8904

Email: sales@samaterials.com

## 2. Hazard(s) 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

### 3. Composition/Information on Ingredients

| Component | CAS No    | Weight % |
|-----------|-----------|----------|
| Manganese | 7439-96-5 | >95      |

### 4. First-aid measures

|  |  |
|--|--|
| <b>Eye Contact</b>                         | Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.  |
| <b>Skin Contact</b>                        | Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention.                                       |
| <b>Inhalation</b>                          | Remove from exposure, lie down. Remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention. |
| <b>Ingestion</b>                           | Clean mouth with water. Get medical attention.   |
| <b>Most important symptoms and effects</b> | No information available.  |
| <b>Notes to Physician</b>                  | Treat symptomatically  |

### 5. Fire-fighting measures

|                                       |                          |
|---------------------------------------|--------------------------|
| <b>Suitable Extinguishing Media</b>   | Dry chemical.            |
| <b>Unsuitable Extinguishing Media</b> | No information available |
| <b>Flash Point</b>                    | No information available |
| <b>Method -</b>                       | No information available |
| <b>Autoignition Temperature</b>       | No information available |
| <b>Explosion Limits</b>               | No information available |

|   |                          |
|---|--------------------------|
| <b>Upper</b>                            | No data available        |
| <b>Lower</b>                            | No data available        |
| <b>Sensitivity to Mechanical Impact</b> | No information available |
| <b>Sensitivity to Static Discharge</b>  | No information available |

**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**

|               |                     |                    |                         |
|---------------|---------------------|--------------------|-------------------------|
| <b>Health</b> | <b>Flammability</b> | <b>Instability</b> | <b>Physical hazards</b> |
| 2             | 2                   | 0                  | N/A                     |

**6. Accidental release measures**

|                                  |   |
|----------------------------------|---|
| <b>Personal Precautions</b>      | Ensure adequate ventilation. Use personal protective equipment as required. |
| <b>Environmental Precautions</b> | 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 and shovel into suitable containers for disposal.

**7. Handling and storage**

**Handling** Avoid contact with skin and eyes. Do not breathe dust. Use spark-proof tools and 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, sparks and flame. Keep under nitrogen. Incompatible Materials. Acids. Bases. Halogens.

**8. Exposure controls / personal protection****Exposure Guidelines**

| Component | ACGIH TLV   | OSHA PEL  | NIOSH IDLH   | Mexico OEL (TWA)           |
|-----------|---|---|--|----------------------------|
| Manganese | TWA: 0.02 mg/m <sup>3</sup><br>TWA: 0.1 mg/m <sup>3</sup> | (Vacated) TWA: 1 mg/m <sup>3</sup><br>Ceiling: 5 mg/m <sup>3</sup><br>(Vacated) STEL: 3 mg/m <sup>3</sup><br>(Vacated) Ceiling: 5 mg/m <sup>3</sup> | IDLH: 500 mg/m <sup>3</sup><br>TWA: 1 mg/m <sup>3</sup><br>STEL: 3 mg/m <sup>3</sup> | TWA: 0.2 mg/m <sup>3</sup> |

*Legend*

ACGIH - American Conference of Governmental Industrial Hygienists

OSHA - Occupational Safety and Health Administration

NIOSH IDLH: NIOSH - National Institute for Occupational Safety and Health

**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.

|                               |  |
|-------------------------------|--|
| <b>Respiratory Protection</b> | No protective equipment is needed under normal use conditions.         |
| <b>Hygiene Measures</b>       | Handle in accordance with good industrial hygiene and safety practice. |

## 9. Physical and chemical properties

|   |                          |
|---|--------------------------|
| <b>Physical State</b>                         | Powder Solid             |
| <b>Appearance</b>                             | Dark brown               |
| <b>Odor</b>                                   | No information available |
| <b>Odor Threshold</b>                         | No information available |
| <b>pH</b>                                     | No information available |
| <b>Melting Point/Range</b>                    | 1260 °C / 2300 °F        |
| <b>Boiling Point/Range</b>                    | 1900 °C / 3452 °F        |
| <b>Flash Point</b>                            | No information available |
| <b>Evaporation Rate</b>                       | Not applicable           |
| <b>Flammability (solid,gas)</b>               | No information available |
| <b>Flammability or explosive limits</b>       |                          |
| <b>Upper</b>                                  | No data available        |
| <b>Lower</b>                                  | No data available        |
| <b>Vapor Pressure</b>                         | No information available |
| <b>Vapor Density</b>                          | Not applicable           |
| <b>Specific Gravity</b>                       | No information available |
| <b>Solubility</b>                             | No information available |
| <b>Partition coefficient; n-octanol/water</b> | No data available        |
| <b>Autoignition Temperature</b>               | No information available |
| <b>Decomposition Temperature</b>              | No information available |
| <b>Viscosity</b>                              | Not applicable           |
| <b>Molecular Formula</b>                      | Mn                       |
| <b>Molecular Weight</b>                       | 54.94                    |

## 10. Stability and reactivity

|   |  |
|---|--|
| <b>Reactive Hazard</b>                  | None known, based on information available   |
| <b>Stability</b>                        | Moisture sensitive.                          |
| <b>Conditions to Avoid</b>              | Incompatible products. Exposure to moisture. |
| <b>Incompatible Materials</b>           | Acids, Bases, Halogens                       |
| <b>Hazardous Decomposition Products</b> | None under normal use conditions             |
| <b>Hazardous Polymerization</b>         | Hazardous polymerization does not occur.     |
| <b>Hazardous Reactions</b>              | None under normal processing.                |

## 11. Toxicological information

### Acute Toxicity

#### Product Information

#### Component Information

| Component | LD50 Oral             | LD50 Dermal | LC50 Inhalation              |
|-----------|-----------------------|-------------|------------------------------|
| Manganese | LD50 = 9 g/kg ( Rat ) | Not listed  | LC50 > 5.14 mg/L ( Rat ) 4 h |

**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** The table below indicates whether each agency has listed any ingredient as a carcinogen.

| Component | CAS No    | IARC       | NTP        | ACGIH      | OSHA       | Mexico     |
|-----------|-----------|------------|------------|------------|------------|------------|
| Manganese | 7439-96-5 | Not listed | Not listed | Not listed | Not listed | 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

**Other Adverse Effects** The toxicological properties have not been fully investigated. See actual entry in RTECS for complete information.

## 12. Ecological information

### Ecotoxicity

Do not empty into drains.

| Component | Freshwater Algae | Freshwater Fish   | Microtox   | Water Flea |
|-----------|------------------|---|------------|------------|
| Manganese | Not listed       | LC50: > 3.6 mg/L, 96h<br>semi-static (Oncorhynchus<br>mykiss) | Not listed | Not listed |

**Persistence and Degradability** Insoluble in water

**Bioaccumulation/ Accumulation** No information available.

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

## 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.

## 14. Transport information

### DOT

**UN-No** UN3089  
**Proper Shipping Name** Metal powder, flammable, n.o.s.  
**Technical Name** Manganese  
**Hazard Class** 4.1  
**Packing Group** III

### TDG

**UN-No** UN3089  
**Proper Shipping Name** Metal powder, flammable, n.o.s.  
**Hazard Class** 4.1  
**Packing Group** III

**IATA**

UN-No UN3089  
 Proper Shipping Name Metal powder, flammable, n.o.s.  
 Hazard Class 4.1  
 Packing Group III

**IMDG/IMO**

UN-No UN3089  
 Proper Shipping Name Metal powder, flammable, n.o.s.  
 Hazard Class 4.1  
 Packing Group III

**15. Regulatory information****United States of America Inventory**

| Component | CAS No    | TSCA | TSCA Inventory notification - Active-Inactive | TSCA - EPA Regulatory Flags |
|-----------|-----------|------|---|-----------------------------|
| Manganese | 7439-96-5 | X    | ACTIVE  | -                           |

**Legend:**

TSCA US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

X - Listed

-' - Not Listed

TSCA 12(b) - Notices of Export Not applicable

**International Inventories**

Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), China (IECSC), Korea (KECL).

| Component | CAS No    | DSL | NDSL | EINECS    | PICCS | ENCS | ISHL | AICS | IECSC | KECL     |
|-----------|-----------|-----|------|-----------|-------|------|------|------|-------|----------|
| Manganese | 7439-96-5 | X   | -    | 231-105-1 | X     | X    |      | X    | X     | KE-22999 |

KECL - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)**U.S. Federal Regulations****SARA 313**

| Component | CAS No    | Weight % | SARA 313 - Threshold Values % |
|-----------|-----------|----------|-------------------------------|
| Manganese | 7439-96-5 | >95      | 1.0                           |

SARA 311/312 Hazard Categories See section 2 for more information

CWA (Clean Water Act) Not applicable

**Clean Air Act**

OSHA - Occupational Safety and Health Administration 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 | Massachusetts | New Jersey | Pennsylvania | Illinois | Rhode Island |
|-----------|---------------|------------|--------------|----------|--------------|
|           |               |            |              |          |              |

|           |   |   |   |   |   |
|-----------|---|---|---|---|---|
| Manganese | X | X | X | X | 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.

**Other International Regulations**

**Mexico - Grade** No information available

**Authorisation/Restrictions according to EU REACH****Safety, health and environmental regulations/legislation specific for the substance or mixture**

| Component | CAS No    | OECD HPV | Persistent Organic Pollutant | Ozone Depletion Potential | Restriction of Hazardous Substances (RoHS) |
|-----------|-----------|----------|------------------------------|---------------------------|--|
| Manganese | 7439-96-5 | Listed   | Not applicable               | Not applicable            | Not applicable                             |

| Component | CAS No    | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements | Rotterdam Convention (PIC) | Basel Convention (Hazardous Waste) |
|-----------|-----------|---|--|----------------------------|------------------------------------|
| Manganese | 7439-96-5 | Not applicable  | Not applicable   | Not applicable             | Not applicable                     |

## 16. Other information

**Prepared By** Stanford Advanced Materials  
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**Print Date** 25-Dec-2021

**Revision Summary** This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

**End of SDS**