
1. Product and Company Identification

Trade Name: Manganese Silicide
Chemical Formula: MnSi
Recommended Use: Scientific research and development

Manufacturer/Supplier: Stanford Advanced Materials
Address: 23661 Birtcher Dr. Lake Forest, CA 92630 USA
Tel #: +1 (949) 407-8904

24-Hour Emergency Contact: +1 (949) 407-8904

2. Hazards Identification

Signal Word: Warning



Hazard Statements (powder): H228: Flammable solid

Precautionary Statements (powder): P210 Keep away from heat/sparks – No smoking
P240 Ground/bond container and receiving equipment
P280: Wear protective gloves/protective clothing/eye protection/face protection
P241: Use explosion-proof electrical/ventilating/lighting/equipment

HMIS Health Ratings (0-4):	Powder	Bulk
Health:	1	1
Flammability:	2	0
Physical:	1	0

3. Composition

Chemical Family: Alloy
Additional Names: None

Manganese (Mn):
Percentage: 0-100 wt.%
CAS #: 7439-96-5
EC #: 231-105-1

Silicon (Si):
Percentage: 0-100 wt.%
CAS #: 7440-21-3
EC #: 231-130-8

4. First Aid Procedures

General Treatment:	Seek medical attention if symptoms persist.
Special Treatment:	None
Important Symptoms:	None
Inhalation:	Remove victim to fresh air. Supply oxygen if breathing is difficult.
Ingestion:	Seek medical attention.
Skin:	Wash affected area with mild soap and water. Remove any contaminated clothing.
Eyes:	Flush eyes with water, blinking often for several minutes. Remove contact lenses if present and easy to do. Continue rinsing

5. Firefighting Measures

Flammability:	Non-flammable, except as powder
Extinguishing Media:	Do not use water for metal fires – use CO ₂ , sand, extinguishing powder.
Spec. Fire Fighting Procedure:	Use full-face, self-contained breathing apparatus with full protective clothing to prevent contact with skin and eyes. See section 10 for decomposition products.

6. Accidental Release Measures

If Material Is Released/Spilled:	Wear appropriate respiratory and protective equipment specified in special protection information. Isolate spill area and provide ventilation. Vacuum up spill using a high efficiency particulate absolute (HEPA) air filter and place in a closed container for disposal. Take care not to raise dust.
Environmental Precautions:	Isolate runoff to prevent environmental pollution.

7. Handling and Storage

Handling Conditions:	Wash thoroughly after handling.
Storage Conditions:	Store in a cool dry place in a tightly sealed container. Store apart from materials and conditions listed in section 10.
Work/Hygienic Maintenance:	Do not use tobacco or food in work area. Wash thoroughly before eating and smoking. Do not blow dust off clothing or skin with compressed air.
Ventilation:	Provide sufficient ventilation to maintain concentration at or below threshold limit.

8. Exposure Controls and Personal Protection

Permissible Exposure Limits:	5 mg/m ³ as Mn, ceiling limit value 5 mg/m ³ as Si, respirable fraction
Threshold Limit Value:	0.02 mg/m ³ as Mn, respirable, long-term value 0.1 mg/m ³ as Mn, inhalable fraction, long-term value
Special Equipment:	None
Respiratory Protection:	Use a respirator with type N95 (USA) or PE (EN 143) cartridges as a backup to engineering controls. Risk assessment should be performed to determine if purifying respirators are appropriate. Only use equipment tested and approved under appropriate government standards.
Protective Gloves:	Nitrile rubber, NBR 0.11mm thick.
Eye Protection:	Safety glasses or goggles
Body Protection:	Protective work clothing. Wear close-toed shoes and long sleeves/pants.

9. Physical and Chemical Characteristics

Color	Grey
Form:	Powder, Granules, Pellets, Sputtering target, Custom parts
Odor:	Odorless
Water Solubility:	Insoluble
Boiling Point:	N/A
Melting Point:	N/A
Flash Point:	N/A
Autoignition Temperature:	N/A
Density:	N/A
Molecular weight:	N/A

10. Reactivity

Stability:	Stable under recommended storage conditions
Reacts with:	Halogens, Interhalogens, Oxidizing agents, Acids
Incompatible Conditions, materials:	N/A
Hazardous Decomposition Products:	Metal oxide fume, Silicon Oxide (SiO ₂ , SiO)

11. Toxicological Information

Potential Health Effects:	
Eyes:	May cause irritation
Skin:	May cause irritation
Ingestion:	May cause irritation
Inhalation:	May cause irritation
Chronic:	Manganese: Chronic exposure to manganese may cause impairment to the central nervous system. Symptoms include sluggishness, sleepiness, muscle weakness, and loss of facial muscle control, edema, emotional disturbances, spastic gait and falling. Chronic manganese poisoning may develop after as little as three months of heavy exposure but usually cases develop after one to three years of exposure
Signs & Symptoms:	N/A
Aggravated Medical Conditions:	N/A
Median Lethal Dose:	3160 mg/kg for rat by mouth as Si
Carcinogen:	N/A

12. Ecological Information

Aquatic Toxicity:	Low
Persistent Bioaccumulation Toxicity:	No
Very Persistent, Very Bioaccumulative:	No
Notes:	N/A

13. Disposal Considerations

Dispose of in accordance with local, state, national, and international regulations.

14. Transportation Data

Hazardous: Hazardous as powder only.



Hazard Class: 4.1 Flammable solids, self-reactive substances and solid desensitized explosives

Packing Group: III

UN Number: UN3089

Proper Shipping Name: Metal powders, flammable, n.o.s. (Manganese Silicon alloy)

15. Regulatory Information

Sec 302 Extremely Hazardous: No

Sec 304 Reportable Quantities: N/A

Sec 313 Toxic Chemicals: Yes

16. Other Information

This safety data sheet should be used in conjunction with technical sheets. It does not replace them. The information given is based on our knowledge of this product, at the time of publication. It is given in good faith. The attention of the user is drawn to the possible risks incurred by using the product for any other purpose other than that for which it was intended. This does not in any way excuse the user from knowing and applying all the regulations governing his activity. It is the sole responsibility of the user to take all precautions required in handling the product. The aim of the mandatory regulations mentioned is to help the user to fulfill his obligations regarding the use of hazardous products.

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