



Safety Data Sheet

In accordance with CFR 1910.1200 (OSHA HCS)

SDS No. 1235

Review Date: March 15, 2019

1 Identification of substance and company

Product name: **Manganese Metal, Powder**
Product code: 11118, 12328, 15630
Relevant use and restrictions on use: Research and product development
Manufacturer/Supplier: Noah Technologies Corporation
1 Noah Park
San Antonio, Texas 78249-3419
Phone: 210-691-2000
Fax: 210-691-2600
Web site: www.noahtech.com
Emergency information: CHEMTREC
800-424-9300

2 Hazards identification

Emergency Overview:

Pictogram(s):



Signal word(s):

Danger

Hazard statements:

H260 - In contact with water releases flammable gases which may ignite spontaneously
H412 - Harmful to aquatic life with long lasting effects

Precautionary statements:

P223 - Keep away from any possible contact with water, because of violent reaction and possible flash fire
P231+232 - Handle under inert gas. Protect from moisture.
P273 - Avoid release to the environment
P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection
P335+334 - Brush off loose particles from skin. Immerse in cool water/ wrap in wet bandages.
P370+378 - In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction
P402+404 - Store in a dry place. Store in a closed container.
P501 - Dispose of contents/ container to an approved waste disposal plant

GHS Classification:

Substances and mixtures, which in contact with water, emit flammable gases - 1
Acute aquatic toxicity - 3
Chronic aquatic toxicity - 3

Hazards not otherwise classified:

None
Flammable Solid - 1

HMIS ratings (scale 0-4):

Health hazard: 1
Flammability: 3
Physical hazard: 2

3 Composition/Information on ingredients

Chemical name: Manganese Metal, Powder
CAS number: 7439-96-5
EC number: 231-105-1
Formula: Mn
Synonyms: None known

4 First aid measures

After inhalation: Move victim to fresh air. If not breathing, give artificial respiration. Get medical attention.
After skin contact: Flush with water and then wash thoroughly with soap or mild detergent and water. For symptoms of exposure, consult a physician.
After eye contact: Flush eyes with plenty of water for at least 15 minutes, lifting the upper and lower eyelids occasionally. Get medical attention if irritation develops.
After ingestion: Never give anything by mouth to an unconscious person. Rinse mouth and give large quantities of water to drink. Get medical attention.

Information for doctor: Show this safety data sheet to the doctor in attendance
Symptoms/effects; acute and delayed: Respiratory irritation, chills, nausea
Immediate medical attention and special treatment needed: No data available

5 Fire-fighting measures

Suitable and unsuitable extinguishing agents: Class D fire extinguisher, CO2 extinguisher, foam, dry chemical or other inert extinguishing material
Do NOT use water.

Special hazards caused by the material, its products of combustion or resulting gases: Oxides of manganese

Special fire fighting procedures: Wear self-contained breathing apparatus. Always wear full fire fighting equipment / clothing in fire situations.

Unusual fire and explosion hazard: Moderate fire and explosion hazard in the form of dust when exposed to flame. Manganese powder with a particle size range of < 74 microns is classified as moderately explosive in a dust cloud by the US Bureau of Mines, Report R16516. May explode if heated in carbon dioxide. Emits toxic fumes under fire conditions.

6 Accidental release measures

Person-related safety precautions: Use personal protective equipment. Avoid formation of dust and aerosols. Ensure adequate ventilation.

Measures for environmental protection: Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Measures for cleaning/collecting: Avoid dusting. Sweep or scoop up and remove. Place in suitable container for proper disposal.

Additional information: See Section 7 for information on safe handling
See Section 8 for information on personal protective equipment
See Section 13 for information on disposal
See Section 15 for regulatory information

7 Handling and storage

Information for safe handling: Avoid contact with skin and eyes. Provide adequate ventilation. Keep away from sources of ignition.
Use non-sparking tools. Handle under dry inert gas.

Information about protection against explosions and fires: Dust explosion hazard. Oxygen concentration less than 15% prevents ignition. May explode if heated in carbon dioxide. Emits toxic fumes under fire conditions.

Storage requirements to be met by storerooms and containers: Keep container closed. Keep away from heat, sparks and open flames. Store in a cool, dry place.
Store away from acids, alkali and other incompatible materials.

Incompatibility (avoid contact with): Strong acids. Strong oxidizers. Strong bases.
Avoid water, steam, halogens, phosphorus, fluorine, hydrogen peroxide, bromine pentafluoride, nitril fluoride, nitric acid, ammonium nitrate, NOx and SOx

Further information about storage conditions: Ignition sources, open flames, sparks, contact with incompatibles

8 Exposure controls/personal protection

Ventilation requirements: Local exhaust. Chemical fume hood. Glove box / bag.

Components with exposure limits that require monitoring: ACGIH TLV: 0.02 mg / m3 (Respirable); 0.1 mg / m3 (inhalable); Central Nervous System impairment
NIOSH IDLH: TWA 1.0 mg / m3; STEL 3.0 mg / m3
OSHA PEL: 5.0 mg / m3 (Ceiling)

General protective and hygienic measures: The usual precautionary measures for handling chemicals should be adhered to
Keep away from foodstuffs, beverages and food
Instantly remove any soiled and impregnated garments
Wash hands during breaks and at the end of the work
Avoid contact with the eyes and skin

Personal protective equipment:

Respiratory protection: Filter-dust, fume, mist
(Use only NIOSH or CEN approved Equipment)

Hand protection: Handle with gloves: Neoprene / Natural rubber / Impervious
Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with product.

Eye protection: Safety goggles

Skin protection: Protective work clothing sufficient to prevent contact.

Additional protective equipment: Emergency eyewash and safety shower.

Precautionary labeling: Do not get in eyes, on skin or on clothing
Do not breathe dust, vapor, mist or gas
Keep container closed
Keep away from heat, sparks and open flames
Store in tightly closed containers in a cool, dry place

9 Physical and chemical properties

Physical state:	Powder / Granules
Color:	Grey (may have a brown oxide coating)
Odor:	Odorless
Odor threshold:	No data available
Molecular Weight (Calculated):	54.938
pH	No data available
Melting point/freezing point/range:	1244 C
Boiling point/range:	1962 C
Sublimation temperature/start:	No data available
Decomposition temperature:	No data available
Flammability (solid, gas):	Flammable
Flash point:	No data available
Autoignition temperature:	No data available
Danger of explosion:	Dust explosion hazard
Flammable limits:	
Lower:	No data available
Upper:	No data available
Evaporation Rate:	No data available
Vapor pressure (mm Hg):	1 mmHg @ 1292 C
Vapor density:	No data available
Specific gravity:	7.44
Bulk density:	No data available
Solubility in/Miscibility with water:	Decomposes
Partition coefficient n-octanol/water:	No data available
Viscosity:	No data available
Other information:	None

10 Stability and reactivity

Reactivity:	No data available
Chemical stability:	Stable under recommended storage conditions
Possibility of hazardous reactions:	Dust explosion hazard
Conditions to be avoided:	Ignition sources. Open flames. Sparks. Contact with incompatibles. See section 7 for information on proper handling and storage
Materials to be avoided:	Strong acids. Strong oxidizers. Strong bases. Water, steam, halogens, phosphorus, fluorine, hydrogen peroxide, bromine pentafluoride, nitril fluoride, nitric acid, ammonium nitrate, NOx and SOx
Dangerous reactions:	May explode if heated in carbon dioxide. Contact with water / moisture causes production of hydrogen
Hazardous decomposition products: (thermal and other)	Oxides of manganese

11 Toxicological information

LD/LC50 values that are relevant for classification:	oral-rat LD ₅₀ : 9,000 mg/kg
Irritation or corrosion of skin:	skin-rabbit 24H:mild
Irritation or corrosion of eyes:	eyes-rabbit 24H:mild
Primary irritant or corrosive effect: on the skin: on the eye:	Mild Mild
Sensitization:	No data available
Potential health effects:	
Inhalation:	Inhalation may cause metal fume fever, chills, nausea and body aches
Ingestion:	No data available
Skin:	No data available
Eyes:	No data available
Signs and symptoms of exposure:	May cause neurological disorders such as apathy, loss of appetite, drowsiness, speech difficulties, muscular twitching, spastic gait and other central nervous system effects resembling Parkinson's disease. Repeated inhalation may cause injury to the central nervous system and kidneys. May cause irritation to the skin and eyes. An experimental tumorigen. Human systemic effects by inhalation include degenerative brain changes, change in motor activity and muscle weakness. Mutagenic data. This product is a questionable carcinogen.
Carcinogenicity:	IARC: No component of this product is identified as probable, possible or confirmed human carcinogen by IARC. ACGIH: No component of this product is identified as a carcinogen or potential carcinogen by ACGIH. NTP: No component of this product is identified as a known or anticipated carcinogen by NTP. OSHA: No component of this product is identified as a carcinogen or potential carcinogen by OSHA.
Additional information:	To the best of our knowledge the acute and chronic toxicity of this substance is not fully known

12 Ecotoxicological information

Toxicity:	
Toxicity to fish:	No data available
Toxicity to daphnia and other aquatic invertebrates:	Daphnia magna EC ₅₀ : 40 mg / L:48H
Toxicity to algae:	No data available
Persistence and degradability:	
Biodegradability:	No data available
Bioaccumulative potential:	
Bioaccumulation:	No data available
Mobility in soil:	No data available
Other adverse effects:	No data available

13 Disposal considerations

Recommendation:	Consult state, local or national regulation for proper disposal Allow professional disposal company to handle waste Must be specially treated under adherence to official regulations
Unclean packagings recommendation:	Disposal must be made according to official regulations

14 Transport information

Land transport DOT



Proper shipping name:	Metal powders, flammable, n.o.s.
DOT Hazard Class:	4.1
UN Identification number:	UN3089
Label(s):	Flammable Solid
Packing group:	III
North American Emergency Response Guidebook No.:	170

Air transport ICAO-TI and IATA-DGR:



Proper shipping name:	Metal powder, flammable, n.o.s.
DOT Hazard Class:	4.1
UN Identification number:	UN3089
Label(s):	Flammable Solid
Packing group:	III
North American Emergency Response Guidebook No.:	170

UPS Ground / FedEx Ground



Proper shipping name:	Metal powders, flammable, n.o.s.
DOT Hazard Class:	4.1
UN Identification number:	UN3089
Label(s):	Flammable Solid
Packing group:	III
North American Emergency Response Guidebook No.:	170

UPS Air



Proper shipping name:	Metal powders, flammable, n.o.s.
------------------------------	----------------------------------

DOT Hazard Class:	4.1
UN Identification number:	UN3089
Label(s):	Flammable Solid
Packing group:	III
North American Emergency Response Guidebook No.:	170

15 Regulatory information

SARA Section 302 Extremely Hazardous components and corresponding TPQs:	No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302 Reactivity Hazard, Chronic Health Hazard
SARA Section 311 / 312 hazards:	Reactivity Hazard, Chronic Health Hazard
SARA Section 313 components:	The following components are subject to reporting levels established by SARA Title III, Section 313: Manganese: CAS No. 7439-96-5 (Revision Date: 2007-07-01)
California Proposition 65 components:	This product does not contain any chemicals known to the State of California to cause birth defects or any other reproductive harm.
TSCA:	Product is listed on the TSCA Inventory

16 Other information

The above information is accurate to the best of our knowledge. However, since data, safety standards and government regulation are subject to change and the conditions of handling and use, or misuse are beyond our control. NOAH MAKES NO WARRANTY, EITHER EXPRESSED OR IMPLIED, WITH RESPECT TO THE COMPLETENESS OR CONTINUING ACCURACY OF THE INFORMATION CONTAINED HEREIN AND DISCLAIMS ALL LIABILITY FOR RELIANCE THEREON. User should satisfy himself that he has all current data relevant to his particular use.