Safety Data Sheet

According to 29 CFR 1910.1200 (OSHA HCS)

SDS No. 85 Review date: August 13, 2019

1 Identification of substance and company

Product details

Product name: ***Manganese (II) oxide***

Product code: 13484, 14875

Relevant identified uses of the substance: 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

Hazard designation: None

Information pertaining to particular dangers for man and environment: Not applicable

HMIS ratings (scale 0-4): Health: 1
Flammability: 0
Physical hazard: 0

3 Composition/ Information on ingredients

Chemical name: Manganese (II) oxide

Designation: (CAS#): 1344-43-0

EC Number: 215-695-8

Formula: MnO

Synonyms: Manganese monoxide, manganous oxide

4 First aid measures

After inhalation: Get medical attention.
Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

After skin contact: Instantly wash with water and soap and rinse thoroughly
If irritation persists, consult a physician

After eye contact: Rinse opened eye for at least 15 minutes under running water. Assure adequate flushing by separating the eyelids with fingers. Consult a physician.

After ingestion: If conscious, rinse mouth out with water and seek medical attention

Information for doctor: Tear production and reddening of the eye, dry red skin, dyspnea, shallow respiration, fever (mimics metal fume fever), physical irritation to eyes and throat. Cold-like symptoms, chills and muscle aches, dry mouth

Immediate medical attention and special treatment needed: Show this safety data sheet to the doctor in attendance

5 Fire-fighting measures

Suitable extinguishing agents: Use water spray, carbon dioxide, alcohol-resistant foam or dry chemical.

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
Wear fully protective fire fighting equipment/clothing in fire situations

Unusual fire and explosion hazard: Not applicable

6 Accidental release measures

Person-related safety precautions: Wear personal protective equipment. Keep unprotected persons away.
Ensure adequate ventilation

Measures for environmental protection: Do not allow material to be released to the environment without proper governmental permits

Measures for cleaning/collecting: Dispose of contaminated material as waste according to item 13
Place in a suitable container for proper disposal

	Ventilate and wash spill site after material removal is complete
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

7 Handling and storage

Information for safe handling:	Keep containers tightly sealed
	Store in cool, dry place in tightly closed containers
	Ensure good ventilation/exhaustion at the workplace
Information about protection against explosions and fires:	This product is not flammable
Storage requirements to be met by storerooms and containers:	No special requirements
Incompatibility (avoid contact with):	Strong oxidizers, hydrogen peroxide, calcium chlorite, fluorine
Further information about storage conditions:	Keep container tightly sealed
	Store in cool, dry conditions in well sealed containers

8 Exposure controls/ personal protection

Ventilation requirements:	Always maintain exposure below permissible exposure limits.
	Local exhaust. Chemical fume hood.
Components with critical values that require monitoring at the workplace:	OSHA PEL: CL 5 mg(Mn)/m3
	ACGIH TLV TWA 0.02 mg(Mn)/m3; central nervous system impairment
Additional information:	None
General protective and hygienic measures:	The usual precautionary measures should be adhered to in handling the chemicals
	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:	Use suitable respirator when high concentrations are present
(Use only NIOSH or CEN approved Equipment)	Use only NIOSH/MESA or CEN approved dust mask type N95 or TYPE P1 (EN 143)
Hand protection:	Handle with gloves. Inspect gloves prior to use. Use proper glove removal technique to avoid skin contact.
Eye protection:	Safety glasses
Skin protection:	Protective work clothing
Additional protective equipment:	Sufficient to prevent contact
	Emergency eyewash and safety shower
Precautionary labeling:	Wash thoroughly after handling
	Do not get in eyes, on skin or on clothing
	Do not breathe dust, vapor, mist, gas
	Store in tightly closed containers
	Store in a cool, dry place

9 Physical and chemical properties

General Information:	
Physical state:	Powder
Color:	Green to brown
Odor:	Odorless
Odor threshold:	No data available
Molecular Weight (Calculated):	70.94
pH (5% solution)	No data available
Melting point/freezing point/range:	1850 C (decomposes)
Boiling point/range:	Decomposes
Sublimation temperature/start:	No data available
Decomposition temperature:	No data available
Flammability (solid, gas):	
Flash point:	Non-flammable
Autoignition temperature:	No data available
Danger of explosion:	No data available
Flammable limits:	
Lower:	No data available
Upper:	No data available
Evaporation rate:	No data available
Vapor pressure (mm Hg):	No data available
Vapor density:	No data available
Specific gravity:	5.45
Bulk density:	No data available
Solubility in/Miscibility with water:	Insoluble

Partition coefficient n-octanol/water:	No data available
Viscosity:	No data available
Other information:	No additional information

10 Stability and reactivity

Reactivity:	No data available
Chemical stability:	Stable
Possibility of hazardous reactions:	Violent reaction with hydrogen peroxide, calcium chlorite, fluorine
Conditions to be avoided:	No decomposition if used and stored according to specifications See section 7 for information on proper handling and storage
Materials to be avoided:	Strong oxidizers, hydrogen peroxide, calcium chlorite, fluorine
Dangerous reactions:	No dangerous reactions known
Hazardous decomposition products: (thermal and other)	Oxides of manganese

11 Toxicological information

Acute toxicity:	
LD/LC50 values that are relevant for classification:	oral-rat LD_{50}: 9000 mg/kg inhalation-rat LC_{50}: > 5.35 mg/L:4H
Irritation or corrosion of skin:	No data available
Irritation or corrosion of eyes:	No data available
Primary irritant or corrosive effect:	
on the skin:	May cause irritation
on the eye:	May cause irritation
Sensitization:	No sensitizing effect known
Potential health effects:	No data available
Inhalation:	May be harmful
Ingestion:	May be harmful
Skin:	May cause mild irritation
Eyes:	May cause mild irritation
Signs and symptoms of exposure:	Manganese compounds can cause central nervous system and pulmonary system damage by inhalation of fumes and dust. Some are experimental tumorigens. Very few poisonings have occurred from ingestion. Inhalation exposure to heavy concentrations can produce a clearly characterized disease. The central nervous system is the chief site of damage. Exposure to dusts and fumes can possibly increase the incidence of upper respiratory infections and pneumonia. Chronic manganese poisoning usually begins with complaints of languor and sleepiness. This is followed by weakness in the legs and the development of stolid, mask-like faces. The patient speaks with a slow monotonous voice. Then muscular twitchings appear, varying from a fine tremor of the hands to coarse, rhythmical movements of arms and legs. To the best of our knowledge the acute and chronic toxicity of the substance is not fully known
Carcinogenicity:	No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH

12 Ecological information

Toxicity:	
Toxicity to fish:	Rainbow trout LC50: > 1.2 mg/L:96H
Toxicity to daphnia and other aquatic invertebrates:	Daphnia magna EC50: > 4 mg/L:48H
Toxicity to algae:	Green algae EC50: > 1.3 mg/L:72H
Persistence and degradability:	
Biodegradability:	No data available
Bioaccumulative potential:	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 packaging recommendation:	Disposal must be made according to official regulations

14 Transport information

Land transport DOT

Proper shipping name:	Chemicals Non-Hazardous
Technical name:	Manganese (II) oxide

Air transport ICAO-TI and IATA-DGR:

Proper shipping name:	Chemicals Non-Hazardous
Technical name:	Manganese (II) oxide

UPS Ground / FedEx Ground

Proper shipping name:	Chemicals Non-Hazardous
Technical name:	Manganese (II) oxide

UPS Air

Proper shipping name:	Chemicals Non-Hazardous
Technical name:	Manganese (II) oxide

15 Regulatory information

SARA Section 302 Extremely Hazardous components and corresponding TPQs:	Not subject to reporting requirements
SARA Section 311 / 312 hazards:	Chronic Health Hazard
SARA Section 313 components:	This product contains chemical(s) subject to the reporting requirements of Section 313 of the Emergency Planning & Community Right-to-know Act of 1986 and 40CFR372
California Proposition 65 components:	Not subject to reporting requirements
TSCA:	This product is listed in 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.