

Plasmaterials, Inc.
 2268 Research Drive
 Livermore, CA 94550
 Ph: (925) 447-4030 Fx: (925) 447-4031
 http://plasmaterials.com

SAFETY DATA SHEET

Section 1- IDENTIFICATION		
COMPOSITION Mn		PRODUCT NAME Manganese
SUPPLIER: Plasmaterials, Inc. 2268 Research Drive Livermore, CA 94550 Ph: 925-447-4030	RECOMMENDED USE: Laboratory Chemicals Scientific Research	EMERGENCY TELEPHONE NUMBERS US: 001-800-424-9300 Europe: 001-703-527-3887

Section 2- HAZARD(S) IDENTIFICATION	
Physical Hazards: Flammable Solids: Category 2 (H228)	OSHA Defined Hazards: Not Classified
Health Hazards: Serious Eye Damage/Eye Irritation: Category 2B (H320)	
Hazardous to the Aquatic Environment, Acute Hazard: Category 3 (H402)	Hazardous to the Aquatic Environment, Long-Term Hazard: Category 3 (H412)
LABEL ELEMENTS: Signal Word: Warning	



HAZARD STATEMENTS

- H228: Flammable solid
- H320: Causes eye irritation
- H360: May damage fertility or the unborn child
- H370: Causes damage to organs
- H372: Causes damage to organs (respiratory system) through prolonged or repeated exposure
- H402: Harmful to aquatic life
- H412: Harmful to aquatic life with long lasting effects

PRECAUTIONARY STATEMENTS

- P201: Obtain special instructions before use
- P202: Do not handle until all safety precautions have been read and understood
- P210: Keep away from heat/sparks/open flames/hot surfaces – No smoking
- P240: Ground/bond container and receiving equipment
- P241: Use explosion-proof electrical/ventilating/lighting equipment
- P264: Wash thoroughly after handling
- P270: Do not eat, drink, or smoke when using this product
- P273: Avoid release to the environment
- P280: Wear protective gloves/protective clothing/eye protection/face protection
- P305+P351+P338: If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P304+P311: If exposed: Call a poison center/doctor

-P308+P313: Get medical advice/attention
 -P321: Specific treatment (see this label)
 -P337+P313: If eye irritation persists: Get medical advice/attention
 -P405: Store locked up.
 -P501: Dispose of contents/container to an approved waste disposal plant in accordance with local/regional/national/international regulations

Hazards not otherwise classified (HNOC):

-None known

Section 3- COMPOSITION/INFORMATION ON INGREDIENTS

COMPONENT	CAS-No	Molecular Weight
Manganese	7439-96-5	54.94 g/mol

Section 4- FIRST AID MEASURES

GENERAL ADVICE: If exposed or concerned: get medical advice/attention. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

INHALATION: Remove victim from exposure to fresh air and keep at rest in a position comfortable for breathing. Give oxygen or artificial respiration if needed. Call a doctor/physician if symptoms develop and/or persist.

SKIN CONTACT: Wash off with soap and plenty of water. Get medical attention if irritation develops and/or persists.

EYE CONTACT: Flush eyes cautiously with plenty of water, lifting upper and lower lids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and/or persists.

INGESTION: Rinse mouth thoroughly. Get medical advice/attention if symptoms develop and/or persist.

MOST IMPORTANT SYMPTOMS/EFFECTS: Irritation of eyes and mucous membranes. Narcosis. Decrease in motor functions. Behavioral changes. Prolonged exposure may cause chronic effects.

INDICATION OF IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED: Provide general supportive measures and treat symptomatically.

Section 5- FIREFIGHTING MEASURES

Suitable Extinguishing Media:

Dry Powder, Dry Sand

Unsuitable Extinguishing Media:

Water

Specific Hazards Arising from the Chemical:

Not information available

Protective Equipment & Precautions for Firefighters:

As in any fire, Firefighters must wear full face, self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective clothing to prevent contact with skin and eyes.

Firefighting Instructions/Specific Methods:

Use standard firefighting procedures and consider the hazards of other involved materials. In case of fire and/or explosion do not breath fumes. Move containers from fire area if you can do so without risk. Do not get water inside container. Water runoff can cause environmental damage.

General Fire Hazards: Flammable solid

Section 6- ACCIDENTAL RELEASE MEASURES

Personal Precautions: Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Wear appropriate personal protective equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained.

Environmental Precautions: Avoid release to the environment. Contact local authorities in case of spillage to drain/aquatic environment. Prevent further leakage or spillage if safe to do so. Do not contaminate water. Avoid discharge into drains, water courses, or onto the ground.

Methods for Containment & Clean Up: Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. The

product is immiscible with water and will spread on the water surface. Stop the flow of material if this is without risk. Cover with dry earth, dry sand, or other non-combustible material followed with plastic sheet to minimize spreading or contact with rain. Do not get water on spilled substance or inside containers. Prevent product from entering drains. Prevent entry into waterways, sewer, basements, or confined areas. For waste disposal, see section 13 of SDS.

Section 7- HANDLING AND STORAGE

Handling: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not allow water to get into the container because of violent reaction and possible flash fire. Do not handle, store, or open near an open flame, sources of heat, or sources of ignition. Protect material from direct sunlight. All equipment used when handling the product must be grounded. Use explosion-proof equipment. Avoid contact with eyes. Avoid contact during pregnancy/while nursing. Use personal protective equipment as required. When using, do not eat, drink, or smoke. Wash hands thoroughly after handling. Avoid release to the environment. Do not empty into drains.

Storage: Store locked up. Keep away from heat, sparks, and open flame. Keep container tightly closed. Store in a cool, well-ventilated, dry place out of direct sunlight. Keep container dry. Never allow product to get in contact with water during storage. Keep out of the reach of children. Store in a building without sprinklers.

Section 8- EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines:

Component	CAS-No.	Value	Control Parameters	Form	Basis
Mn	7439-96-5	STEL	3 mg/m ³	Fume	USA. NIOSH Pocket Guide to Chemical Hazards Materials
		TWA	1 mg/m ³	Fume	USA. NIOSH Pocket Guide to Chemical Hazards Materials
		Ceiling	5 mg/m ³	Fume	USA. Occupational Exposure Limits (OSHA) Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Biological Limit Values: No biological exposure limits noted for the substance

Hygiene Measures: Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of the workday. When using do not smoke, eat, or drink. Keep away from food and drink. Wash thoroughly after handling and before eating, drinking and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.

Personal Protective Equipment:

Eye/Face Protection: Wear safety glasses with side shields or goggles. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU).

Skin and Body Protection: Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Wear suitable protective clothing. The type of protective clothing equipment must be selected according to the concentration and amount of the dangerous substance and to the specific workplace.

Respiratory Protection: Wear positive pressure self-contained breathing apparatus (SCBA). Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Thermal Hazards: Wear appropriate thermal protective clothing when necessary.

Section 9- PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Solid

Odor: Not available

Odor Threshold: No information available
pH: No information available
Melting Point/Range: 1,246°C (2,274.8°F)
Boiling Point/Range: 2,061°C (3,741.8°F)
Flash Point: No information available
Evaporation Rate: No information available
Flammability (solid,gas): No information available
Flammability or Exposure Limits:
 Upper: No information available
 Lower: No information available
Vapor Pressure: No information available
Vapor Density: No information available
Relative Density: No information available
Density: 7.44 g/cm³
Specific Gravity: 7.44
Solubility: Insoluble
Partition coefficient; n-octanol/water: No information available
Auto Ignition Temperature: No information available
Decomposition Temperature: No information available
Viscosity: No information available
Explosive Properties: No information available
Oxidizing Properties: No information available
Evaporation Rate: No information available

Section 10- STABILITY AND REACTIVITY

Reactive Hazard: No information available.

Stability: Risk of ignition.

Conditions to Avoid: Heat, flames, and sparks. High temperatures.

Incompatible Materials: No information available

Hazardous Decomposition Products: Chlorine

Hazardous Polymerization: No information available

Hazardous Reactions: No information available

Section 11- TOXICOLOGICAL INFORMATION

Information on likely Routes of Exposure:

Inhalation: No information available

Skin Contact: No information available

Eye Contact: Causes eye irritation

Ingestion: No information available

Symptoms Related to the Physical, Chemical and Toxicological Characteristics: Narcosis, Behavioral changes, Decrease in motor functions.

Information on Toxicological Effects:

Acute Toxicity: No information available

Skin Corrosion/Irritation: No information available

Serious eye damage/irritation: Causes eye irritation

Respiratory or Skin Sensitization: No information available

Carcinogenicity: This product is not considered to be a carcinogen by IARC, ACGIH, NTP or OSHA.

Germ Cell Mutagenicity: No information available

Reproductive Toxicity: May damage fertility or the unborn child

Development Effects: No information available

Specific Target Organ Toxicity – single exposure: Causes damage to organs
Specific Target Organ Toxicity – repeated exposure: Causes damage to organs through prolonged or repeated exposure
Aspiration Hazard: No information available
Chronic Effects: Causes damage to organs through prolonged or repeated exposure
-To the best of our knowledge, the chemical, physical and toxicological properties have not been thoroughly investigated.

Section 12- ECOLOGICAL INFORMATION

Toxicity: Harmful to aquatic life with long lasting effects. Accumulation in aquatic organisms is expected.
Toxicity to Crustacea: EC50-Water flea (Daphnia magna) – 40 mg/l – 48 hours
Persistence and Degradability: No information available
Bioaccumulation/Accumulation: No information available
Mobility in Soil: No information available
Other Adverse Effects: No information available.

Section 13- DISPOSAL CONSIDERATIONS

Waste Disposal Methods: Consult authorities before disposal. This material and its container must be disposed of as hazardous waste. Incinerate the material under controlled conditions in an approved incinerator. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways, or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

Section 14- TRANSPORT INFORMATION

DOT: Not regulated as dangerous goods
IATA: Not regulated as dangerous goods
IMDG/IMO: Not regulated as dangerous goods

Section 15- REGULATORY INFORMATION

US Federal Regulations: CERCLA/SARA Hazardous Substances – Not applicable
All components are on the US EPA TSCA Inventory List.
TSCA Section 12(b) Export Notification (40 CFR 707, Subpt.D): Not regulated
U.S. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050): Not Listed
CERCLA Hazardous Substance List (40 CFR 302.4): Not Listed

SARA Hazard Categories:

Immediate Hazard: Yes
Delayed Hazard: No
Fire Hazard: Yes
Pressure Hazard: No
Reactive Hazard: No

SARA 302 Extremely Hazardous Substance: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302

SARA 311/312 Hazardous Chemical: Yes

SARA 313 (TRI Reporting):

Component	CAS-No	% By Wt
Manganese	7439-96-5	100

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List: Manganese (CAS No: 7439-96-5)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130): Not regulated

Safe Drinking Water Act (SDWA): Not regulated

US California Controlled Substances. CA Department of Justice (California Health & Safety Code Section 11100): Not listed

US California Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3 subd. (a)): Manganese (CAS-No: 7439-96-5)

US California Proposition 65: This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

US Massachusetts Right-To-Know – Substance List: Manganese (CAS-No: 7439-96-5)

US New Jersey Right-To-Know - Substances: Manganese (CAS-No: 7439-96-5)

US New Jersey Worker & Community Right-To-Know Act: Manganese (CAS-No: 7439-96-5)

US Pennsylvania Right-To-Know Hazardous Substances: All compounds of this substance are considered environmental hazards: Manganese (CAS-No: 7439-96-5)

US Pennsylvania Worker & Community Right-To-Know Law: Manganese (CAS-No: 7439-96-5)

US Rhode Island Right-To-Know Law: Manganese (CAS-No: 7439-96-5)

Section 16- OTHER INFORMATION

The above information is accurate to the best of our knowledge. However, since data, safety standards and government regulations are subject to change, the conditions of handling and use, or misuse are beyond our control, Plasmaterials, Inc. 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. Users should satisfy themselves that they have all current data relevant to their particular use.

The information in this SDS was obtained from sources, which we believe are reliable. However, the information is provided without any representation or warranty, expressed or implied, regarding the accuracy or correctness.

The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product.

REVISION: 05-27-17