

Material Safety Data Sheet

Revised 7/95
Reviewed 3/04

Section I

Manufacturer's Name
Coatings For Industry, Inc.
319 Township Line Road
Souderton, PA 18964

Emergency Telephone #
1-800-535-5053

Non-Emergency Telephone #
215-723-0919

Chemical Name & Synonyms
Manganese Powder

Chemical Family
Metal

Formula
Mn

Trade Name
MN Powder
Stock # PM 1226

Section II - Hazardous Ingredients

	CAS #	%	PEL	TLV
Manganese	7439-96-5	>99	5.0 mg/m ³ ceiling	5.0 mg/m ³
			Above for dust, for fume : TWA TLV = 1.0 mg/m ³ STEL = 3.0 mg/m ³ (15 min.)	

Manganese is on the SARA Title III, section 313 Toxic Chemicals List.

Section III - Physical Data

Boiling Point, 760 mm Hg. ~~~~~ 2095° C (3803° F)
Melting Point ~~~~~ 1244° C (2271° F)
Specific Gravity (H₂O = 1) ~~~~~ 2.7 to 3.7
Vapor Pressure ~~~~~ 1.2 mm Hg @ 1244° C
Vapor Density (Air = 1) ~~~~~ Not Volatile
Water Solubility ~~~~~ Not Soluble
% Volatile by Weight ~~~~~ Not Volatile
Evaporation Rate ~~~~~ Not Volatile
Appearance and Odor ~~~~~ Gray/silvery powder; no odor
pH (10% slurry) ~~~~~ N/A

Section IV - Fire and Explosion Data

Flash Point ~~~~~ None Determined
Autoignition Temperature ~~~~~ 460° C (860° F) for -50 um size
Flammable Limits in Air, % by Volume ~~~~~ None Determined
Lower ~~~~~ None Determined
Upper ~~~~~ None Determined

Extinguishing Media - Special dry chemical, dry sand, dry powder. Allow to burn out.

Special Fire Fighting Procedures - Do not use water.

Unusual Fire and Explosion Hazards - The U.S. Bureau of Mines Report RI-6516 lists -50 um manganese as moderately explosive. Dust cloud with concentration of at least 125 g/m³ (0.125 oz/ft³) will require a temperature of 460° C (860° F.) to ignite.

Section V - Health Hazard Information

Routes of Exposure

Inhalation

Acute - Metal fume fever symptoms of chills, fever, vomiting, and weakness.

Symptoms will occur within one hour of exposure, and last for only a day.

Chronic - Long term exposure results in neurological damage with symptoms of Parkinsonism. Poor coordination, difficulty in articulating, and tremors may be evident. Emotional disorders and hallucinations may occur.

Skin Contact - A mild irritation results from skin contact.

Skin Absorption - Absorption through the skin does not take place to any significant effect.

Eye Contact - A mild irritation results from eye contact.

Ingestion - Toxic symptoms usually result only from doses sufficiently large to cause gastrointestinal injury. Absorption of manganese from the gastrointestinal tract is very slow and incomplete in normal conditions.

Emergency and First Aid Procedures

Eyes - Flush eyes immediately with large amounts of water, lifting the lower and upper lids occasionally. If irritation persists, consult a physician.

Skin - Wash the skin using soap or mild detergent and water. Get medical attention if irritation develops and persists.

Inhalation - Move the exposed person to fresh air at once. Keep warm and at rest. If breathing has stopped, perform artificial respiration. Consult a physician immediately.

Ingestion - If person is conscious, give large quantities of water to drink and induce vomiting. Get medical attention as soon as possible.

NOTE TO PHYSICIAN...

Manganese exposure causes metal fume fever or pneumonitis. Lung surveillance (14''x 17'' roentgenogram, FVC and FEV (1 sec)). Blood changes have been reported. CBC is advised. Kidney damage has been reported in exposed humans, but this organ is not the primary organ for excretion. Urinalysis is suggested.

Section VI - Reactivity Information

Manganese reacts with water or steam to produce potentially flammable hydrogen. The metal can react with oxidizing agents.

Section VII - Spill and Leak Procedures

If large amounts of manganese powder are spilled :

1. Restrict the area to persons wearing protective clothing and using protective equipment until the cleanup has been completed.
2. Remove all ignition sources.
3. Ventilate the area of the spill.
4. Collect the spilled material in a way to minimize the generation of dust. Place dust in an appropriate container and burn in a hood.
5. For large quantities : Dissolve manganese in a flammable solvent and atomize in a suitable combustion chamber.

Section VIII - Special Protection Information

Ventilation Requirements - Provide adequate ventilation to keep manganese dust below the TLV of 1.0 milligrams per cubic meter (mg/m³). Good general ventilation practice requires capture of dust and fumes at the source.

Personal Protective Equipment

Respiratory - When control is not possible, follow OSHA 29 CFR 1910.132,133,134. Use NIOSH/MSHA TC-23 respirator providing protection against dust having a TLV of not less than 0.05 mg/m³.

Eye - Provide dust proof safety goggles when dust level approaches the TLV. Do not permit contact lenses.

Gloves - As appropriate against physical hazards.

Other - Eating and smoking should not be permitted in areas where dust is present. The use of barrier cream to protect skin is recommended. Workers should wash before meals. They should bathe and change clothing before leaving work.

Section IX - Special Precautions

When milling to <100 mesh, use an inert atmosphere. Store manganese in a dry area at -20 to 40° C (0 to 100° F.).

Section X - Hazardous Material Identification System (HMIS)

Health Hazard ~~~~~2
Flammability Hazard ~~~~~ 2
Reactivity Hazard ~~~~~ 1
Maximum Personal Protection ~~~~~E

Section XI - Environmental Information

Waste Disposal Method -

1. Make packages of small amounts of manganese in paper or other flammable material and burn them in a suitable combustion chamber in a hood or with an appropriate effluent gas cleaning device.
2. Reclaim or dissolve large amounts in a flammable solvent (such as alcohol) and atomize in a suitable combustion chamber equipped with an appropriate effluent gas cleaning device.

**** Manganese has not been found to be carcinogenic by NTP or IARC.****

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