

MATERIAL SAFETY DATA SHEET

Identity: Calcined Manganous Oxide

Common Name: Metallic Oxide

CAS Number: Not Established

SECTION I

Manufacturer's Name:

American Minerals

Address:

R.R. #1, Box 47
Rosiclare, IL 62982
Tel. (618) 285-6558



Emergency Telephone

Telephone Number for Information: 302-652-3301

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SECTION II-HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

Material	CAS Number	% Weight	Transitional ¹ OSHA PEL	OSHA PEL	ACGIH TLV
Manganous Oxide* as Mn: Dust and Comp.	1344-43-0	78-80	5 MG/M3 Ceiling	5 MG/M3 Ceiling	5 MG/M3
Fume			5 MG/M3 Ceiling	1 MG/M3 3 MG/M3 STEL	1 MG/M3 3 MG/M3 STEL
(Manganese)		(60-61)			
Iron oxide	1309-37-1	5-6	10 MG/M3	10 MG/M3 for Iron oxide fume	5 MG/M3 for Iron oxide fume
Aluminum Oxide	1344-28-1	4-5	15 MG/M3 Total Dust 5 Mg/M3 Resp. Dust	10 MG/M3 Total Dust 5 MG/M3 Resp. Dust	10 MG/M3 Total Dust

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Silicon Dioxide (quartz)	14808-60-7	4-5	$\frac{10 \text{ MG/M}^3}{\% \text{SiO}_2 + 2}$	0.1 MG/M ³ Resp. Dust	0.1 MG/M ³ Resp. Dust
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Trace amounts (<1.0%) of magnesium oxide and manganese dioxide exist in this product.

¹The transitional OSHA-PELs are the past PELs. On January 19, 1989, OSHA published its amendments to the existing air contaminants standards which are contained in 29 CFR 1910.1000 Tables Z-1, Z-2, and Z-3. These new limits became effective on March 1, 1989, and are indicated as FINAL OSHA-PEL's. As defined by OSHA, a STEL (Short-Term Exposure Limit) is the employee's 15-minute, time-weighted average exposure which must not be exceeded at anytime during a workday.

* Note - SARA Title III - Section 313 - Toxic chemical.

EPA SARA Title III Hazard Categorization

As defined by 40 CFR 370, the product is categorized as both an "immediate (acute) health hazard" and a "delayed (chronic) health hazard".

SECTION III-PHYSICAL/CHEMICAL CHARACTERISTICS

Boiling Point: N/A	Freezing Point: N/A
Vapor Pressure (mm Hg): N/A	Specific Gravity: N/A
Vapor Density (AIR = 1): N/A	Evaporation Rate: N/A
Melting Point: N/A	Solubility in Water: Insoluble

Appearance and Odor: Greenish gray powder or granules. No odor.

SECTION IV-FIRE AND EXPLOSION HAZARD DATA

Flash Point: N/A

Flammable Limits: N/A LEL: N/A UEL: N/A

Extinguishing Media: This product does not present a fire hazard. However, if involved in a fire use dry chemical, salt or sand.

Special Fire Fighting Procedures: None

Unusual Fire and Explosion Hazards: When heated above 1100°F., manganese dioxide will release oxygen which will help support combustion of other materials. Iron oxide may be generated. This material should be kept away from high heat and flammable materials.

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exposure and bronchial asthma. Concentrations averaging 210 MG/M3 have been associated with pneumonia.

Iron oxide fume or dust exposures, when excessive, may result in development of a benign pneumoconiosis, called siderosis, which is observable as an x-ray change. No physical impairment of lung function has been associated with siderosis. Inhalation of excessive concentrations of iron oxide may enhance the risk of lung cancer development in workers exposed to pulmonary carcinogens.

Aluminum fume and dust exposures have been associated with lung disease but the effects are complicated due to other simultaneous exposures to silica and iron oxide.

Silicon dioxide or crystalline silica (quartz) is an acute irritant dust. The prolonged inhalation of excessive levels of dusts containing free silica may result in the development of the disabling pulmonary fibrosis known as silicosis. Silicosis is a disease characterized by generalized fibrotic changes and the development of miliary nodules in both lungs, and clinically by shortness of breath, decreased chest expansion, lessened capacity for work, absence of fever, increased susceptibility to tuberculosis and characteristic x-ray findings. It has been concluded from toxicological and epidemiological studies that silicon dioxide should be classified as a carcinogen.

Carcinogenicity: NTP: No IARC Monographs: No OSHA Reg.: No
This product, as a mixture, has not been shown to be carcinogenic. However, crystalline silica, which is a component, is considered by NTP as reasonably anticipated to be a carcinogen and by IARC as an animal carcinogen and limited human carcinogen.

Signs and Symptoms of Exposure:

Exposure to metal fumes and dusts may cause metal fume fever. Skin and respiratory irritation may occur.

Medical Conditions Generally Aggravated by Exposure:

Excessive dust exposures may aggravate impaired respiratory systems.

Emergency and First Aid Procedures:

Inhalation: If acute overexposure to dusts or fumes occurs, remove victim from the adverse environment and seek medical attention. Give artificial respiration if victim has stopped breathing.

Eye Contact: Eye contact does not present a hazard under normal conditions of use. However, should eye contact occur flush with large amounts of water. Seek prompt medical attention.

Skin Contact: If dust gets on the skin, wash the contaminated area with soap and water.

Ingestion: Ingestion is not a probable source of exposure to the dust or fume. If particles are ingested, seek medical attention.

SECTION VII-PRECAUTIONS FOR SAFE HANDLING AND USE

Steps to be Taken in Case Material is Released or Spilled:

If there is a spill, clean up using methods which avoid dust generation such as dry or wet vacuuming. Compressed air should not be used to clean up spills of the ore. During clean-up, skin and eye contact and inhalation of dust should be avoided as much as practical. Provide local exhaust or dilution ventilation as required. Collect material in appropriately labeled containers.

Waste Disposal Method:

Dispose of in accordance with applicable regulations.

Precautions to be Taken in Handling and Storing:

Store in a cool, dry, well-ventilated area. Do not store near strong acids or oxidizers.

Other Precautions: N/A

SECTION VIII-CONTROL MEASURES

Respiratory Protection:

When engineering controls are not sufficient to control overexposure, appropriate respirators should be used, such as half-mask air-purifying respirators. A competent health professional should be consulted for respirator selection.

Ventilation:

Local Exhaust: As needed, to control dust and fume.

Mechanical (General): As needed, to control dust and fume.

Special and Other: N/A

Protective Gloves:

As needed, to protect against physical hazards.

Eye Protection:

Safety glasses with side shields are recommended when there is a reasonable probability of injury during handling.

Other Protective Clothing or Equipment: N/A

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