



MATERIAL SAFETY DATA SHEET

MANGANESE OXIDE

Section 1-Identification of the Substance/Preparation/Company

Product Name : Manganese Oxide
Formula : MnO
Use : Laboratory reagent
Manufacturer : Pantheon FZE
JAFZA 17/329,
PO Box: 17899, Jabel Ali,
Dubai, UAE
Emergency contact : +971 4 881 8215

Section 2-Hazards Identification

Inhalation: May cause irritation to the respiratory tract. Inhalation can cause a flu-like illness (metal fume fever). This 24- to 48- hour illness is characterized by chills, fever, aching muscles, dryness in the mouth and throat and headache. May cause pleuritis and/or severe or fatal pneumonia.

Ingestion: May cause abdominal pain and nausea. Although they are poorly absorbed through the intestines, inorganic manganese salts may produce hypoglycemia and decreased calcium blood levels should absorption occur.

Skin Contact: May cause irritation with redness and pain. Small particles embedded into the skin can cause localized inflammatory reactions.

Eye Contact: May cause irritation redness and pain.

Chronic Exposure: Chronic manganese poisoning can result from excessive inhalation and ingestion exposure and involves impairment of the central nervous system. Early symptoms include sluggishness, sleepiness, and weakness in the legs. Advanced cases have shown fixed facial expression, emotional disturbances, spastic gait and falling. Illness closely resembles Parkinson's Disease. Kidney effects, blood changes and manganese psychosis also may occur as a result of chronic exposure. Chronic inhalation exposure can cause lung damage.

Aggravation of Pre-existing Conditions:

Persons with impaired respiratory function, psychiatric or neurological disturbances, and nutritional deficiencies may be more susceptible to the effect of this substance.



Section 3-Composition/Information on Ingredients

Ingredient	: Manganese Oxide
CAS No	: 1344-43-0
Concentration	: Mn 50 - 62%
Hazardous	: No

Section 4-First Aid Measure

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

Ingestion: Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention.

Skin contact: Immediately flush skin with plenty of soap and water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention if irritation develops.

Eye contact: Immediately flush eyes with plenty of water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get medical attention if irritation persists.

Section 5-Fire fighting procedure

Fire: Not considered to be a fire hazard.

Explosion: Not considered to be an explosion hazard.

Fire extinguishing Media: Use any means suitable for extinguishing surrounding fire.

Special Information: In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full face-piece operated in the pressure demand or other positive pressure mode.

Section 6-Accidental Release Measure

Ventilate the area of leak or spill. Keep unnecessary and unprotected people away from area of spill. Wear appropriate personal protective equipment as specified in section 8.

Spills: Pick up and place in a suitable container for reclamation or disposal, using a method that does not generate dust.



Section 7-Handling and Storage

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Containers of this material may be hazardous when empty since they retain product residues (dust solids); observe all warnings and precautions listed for the product.

Section 8-Exposure control/Personal protection

Airborne Exposure Limits:

- **OSHA Permissible Exposure Limit (PEL):** 5 mg/m³ ceiling for manganese compounds as Mn
- **ACGIH Threshold Limit Value (TLV):** 0.2 mg/m³ (TWA) for manganese, elemental and inorganic compounds as Mn.

Ventilation System:

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

Personal Respirators (NIOSH Approved):

If the exposure limit is exceeded, a half-face dust/mist respirator may be worn for up to ten times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. A full-face piece dust/mist respirator may be worn up to 50 times the exposure limit, or the maximum use concentration specified by the appropriate regulatory agency, or respirator supplier, whichever is lowest. For emergencies or instances where the exposure levels are not known, use a full-face piece positive-pressure, air – supplied respirator. **WARNING:** Air purifying respirators do not protect workers in oxygen-deficient atmospheres.

Skin Protection:

Wear protective gloves and clean body-covering clothing.

Eye Protection:

Use Chemical safety goggles and/or full face shield where dusting or splashing of solutions is possible. Maintain eye wash fountain and quick-drench facility in work area.



Section 9-Physical Chemical Properties

Appearance	: Brown to black powder
Molar Mass	: 70.9374 g/mol
Odor	: Odorless
Solubility	: Negligible (<0.1%)
Density	: 5.37 g/cm ³ (23 oC)
% Volatiles by volume @ 21C (70F)	: 0
Melting Point	: 1945 °C

Section 10-Stability and Reactivity

Stability: Stability under ordinary conditions of use and storage.

Conditions to Avoid: Incompatibles

Hazardous Polymerization: will not occur.

Incompatibilities: Reacts vigorously with strong reducing agents, acids or bases

Conditions to Avoid: Incompatibles

Section 11-Toxicity Information

No LD50/LC50 information found relating to normal routes of occupational exposure. Investigated as a reproductive effector.

-----\Cancer Lists\-----

---NTP Carcinogen----

Ingredient	Known	Anticipated	IARC Category
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Manganese Oxide 1344-43-0	No	No	None

Section 12-Ecological Information

Environmental Fate : No information found

Environmental Toxicity : No information found

Section 13-Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Disposal of container and unused contents in accordance with federal, state and local requirements.



Section 14-Transport Information

Not regulated

Section 15-Regulatory Information

-----\Chemical Inventory Status - Part 1\-----

Ingredient	TSCA	EC	Japan	Australia
Manganese Dioxide (1313-13-9)	Yes	Yes	Yes	Yes

-----\Chemical Inventory Status - Part 2\-----

Ingredient	--Canada--	Korea	DSL	NDSL	Phil.
Manganese Dioxide (1313-13-9)		Yes	Yes	No	Yes

-----\Federal, State & International Regulations - Part 1\-----

Ingredient	-SARA 302-	TPQ	List	-----SARA 313----- Chemical Catg.
Manganese Dioxide (1313-13-9)	No	No	No	Manganese co

-----\Federal, State & International Regulations - Part 2\-----

Ingredient	-RCRA- CERCLA	261.33	-TSCA- 8(d)
Manganese Dioxide (1313-13-9)	1	No	No

Chemical Weapons Convention: No TSCA 12(b): No CDTA: No
 SARA 311/312: Acute: Yes Chronic: Yes Fire: Yes Pressure: No
 Reactivity: No (Pure / Solid)

Australian Hazchem Code: 1WE

Poison Schedule: None allocated.

WHMIS:

This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.



Section 16-Additional Information

NFPA Ratings: Health: 2 Flammability: 0 Reactivity: 1 Other: Oxidizer

Label Hazard Warning:

DANGER! OXIDIZER. CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE. HARMFUL IF SWALLOWED OR INHALED. AFFECTS LUNGS, CENTRAL NERVOUS SYSTEM, BLOOD AND KIDNEYS. MAY CAUSE IRRITATION TO EYES AND RESPIRATORY TRACT.

Label Precautions:

Keep from contact with clothing and other combustible materials.

Store in a tightly closed container.

Remove and wash contaminated clothing promptly.

Avoid contact with eyes.

Wash thoroughly after handling.

Avoid breathing dust.

Use only with adequate ventilation.

Label First Aid:

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention. If swallowed, induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention. In case of eye contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation develops or persists.

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