

MATERIAL SAFETY DATA SHEET

July 1, 1986

SECTION I NAME

PRODUCT MANGANESE DIOXIDE, PURE

CHEMICAL SYNONYMS Manganese Peroxide

FORMULA MnO₂

UNIT(S) SIZE 100 g., 500 g., 2.5 Kg.

C.A.S. No. 1313-13-9

		Health	2
Day 716-226-6177 Night 716-334-4222		Fire	0
NFPA HAZARD RATING: LEAST SLIGHT MODERATE HIGH EXTREME		Reactivity	3
0	1	2	3
4	3	2	1

SECTION II HAZARDOUS INGREDIENTS OF MIXTURES

Principal Hazardous Component(s) Manganese Dioxide

TLV Units 99% See Section V

CAUTION! STRONG OXIDANT-MAY IGNITE ORGANIC MATERIALS.

HAZARDOUS IF INHALED-CAN CAUSE NERVOUS SYSTEM INJURY.

SECTION III PHYSICAL DATA

Melting Point (°F)	Losses oxygen @ 535°C.	Specific Gravity (H₂O = 1)	5.026
Boiling Point (°F)	Decomposes 535°C.	Percent Volatile by Volume (%)	Non-volatile (MA)
Vapor Pressure (mm Hg)	Negligible as solid.	Evaporation Rate (N-BUTYL AC. = 1)	Non-volatile (MA)
Vapor Density (Air = 1)	Data not listed.		
Solubility in Water	Insoluble in water.		
Appearance and Odor	Gray silvery metallic appearance powder or granular; no odor.		

SECTION IV FIRE AND EXPLOSION HAZARD DATA

Flash Point (Method Used)	Non-Flammable (MA)	Flammable Limits in Air % by Volume	Lower: NA Upper: NA
Extinguisher	Water spray, carbon dioxide (CO ₂); dry chemical (ABC).		

SPECIAL FIREFIGHTING PROCEDURES

In fire conditions, wear a NIOSH-approved, self-contained breathing apparatus.

UNUSUAL FIRE AND EXPLOSION HAZARDS

Moderate fire hazard, by chemical reaction; a powerful oxidizer. It must NOT be heated or rubbed in contact with easily oxidizable matter. At 535°C decomposes to Mn₂O₃ and oxygen. If manganese dioxide is in contact with easily oxidizable substances, violent combustion or explosion may result upon ignition from any source. Increases the flammability of any combustible substances.

OTHER REGULATED MATERIAL-8.

D.O.T.



FREY SCIENTIFIC

905 HICKORY LANE MANSFIELD OHIO 44905

MSDS No. Effective Date

Approved by U.S. Department of Labor "essentially similar" to form OSHA-20

SECTION V HEALTH HAZARD DATA

Threshold Limited Value

TM: As Manganese [CAS No. 7439-96-5] as manganese dust and compounds 5 mg/m³ ceiling limit (ACGIH 1983-84).

Effects of Overexposure

HUMAN TOXICITY: Occurs by inhalation of the dust or fumes. Symptoms: languor, sleepiness, weakness, emotional disturbances, spastic gait, paralysis. Picture resembles Parkinsonism. **EYES:** No specific hazard known to us. However, any material that contacts the eye may be irritating or cause mechanical injury. **SKIN:** Not absorbed through skin.

Emergency and First Aid Procedures

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INHALATION: Remove to fresh air. If all effects develop, get medical attention. **SKIN:** Flush with water. **EYES:** In case of contact flush thoroughly with water. If irritation develops or persists get medical attention. **INGESTION:** If swallowed, if conscious, give one or two glasses of water to drink. Induce vomiting and call physician.

SECTION VI REACTIVITY DATA

Stability Unstable

Do not heat or rub with organic matter or other oxidizable substances, e.g. sulfur, sulfides, phosphides, hypophosphites, etc.

Incompatibility (Materials to avoid)

Avoid contact with chlorates, chlorine, trifluoride, hydrogen peroxide, sulfuric acid, potassium azide, rubidium, ethylal and sodium peroxide.

Hazardous Decomposition Products

Heating above 535°C will produce oxygen and Mn₂O₃. Further heating will produce manganese fume.

Hazardous Polymerization May Occur

Will Not Occur

SECTION VII SPILL OR LEAK PROCEDURES

Steps to be taken in case material is released or spilled

Sweep up and place in a suitable container for disposal.

Waste Disposal Method

Dispose of in an approved chemical landfill or contract with a licensed waste disposal service.

SECTION VIII SPECIAL PROTECTION INFORMATION

Discharge, treatment, or disposal may be subject to federal, state, or local laws.

Ventilation Local Exhaust

None should be needed in normal laboratory handling. If dusty conditions prevail wear a NIOSH-approved dust mask.

Protective Gloves

None needed.

Other Protective Equipment

Goggles, eye wash station, lab coat, fire extinguisher.

SECTION IX SPECIAL PRECAUTIONS

Precautions to be Taken in Handling and Storing

Store in a cool, dry place away from easily oxidizable materials, such as oils and grease. Wash thoroughly after handling.

Other Precautions

Read label on container before using.

For laboratory use only. Not for drug, food or household use. Keep out of reach of children.

Rev. No. 1 Date 1/28/86 Approved

Chemical Safety Coordinator

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