



ALDON CORPORATION

MATERIAL SAFETY DATA SHEET

1533 W. Henrietta Rd.
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MSDS No. MM 220
Effective Date March 25, 1999

SECTION V HEALTH HAZARD DATA

MM 220

Threshold Limited Value TWA: As Manganese [CAS No. 7439-96-5] as manganese dust and compounds 5 mg/m³ ceiling limit (ACGIH 1992-93).

Effects of Overexposure **TARGET ORGANS AFFECTED:** Respiratory system, central nervous system. **INHALATION:** Pulmonary effects, consisting of dyspnea, shallow respiration and fever which mimic metal fume fever. Physical irritation to throat. Cold-like symptoms, chills, muscle aches, dryness of the mouth. **EYES:** May be irritating or cause mechanical injury, conjunctivitis. **SKIN:** May cause irritation, dermatitis.

Emergency and First Aid Procedures **INHALATION:** Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention. **SKIN:** Flush with water, then wash with mild soap and water. **EYES:** Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get medical attention. **INGESTION:** If swallowed, if conscious, give one or two glasses of water to drink, induce vomiting and call physician. Never give anything by mouth to an unconscious person.

SECTION VI REACTIVITY DATA

Stability	Unstable		Conditions to Avoid	Do not heat or rub with organic matter or other oxidizable substances, e.g. sulfur, sulfides, phosphides, hypophosphites, etc.
	Stable	X		

Incompatibility (Materials to Avoid) Avoid contact with chlorates, strong oxidizers, organic materials, combustible materials.

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

Hazardous Polymerization		Conditions to Avoid	Not applicable.
May Occur	Will Not Occur		
	X		

SECTION VII SPILL OR LEAK PROCEDURES

Steps to be taken in case material is released or spilled If not contaminated, recover for recycling. Sweep up and place in a suitable container for disposal. Wash spill area with soap and water.

Waste Disposal Method Discharge, treatment, or disposal may be subject to Federal, State or Local laws. These disposal guidelines are intended for the disposal of catalog-size quantities only. Dispose of in an approved chemical landfill or contract with a licensed waste disposal service.

SECTION VIII SPECIAL PROTECTION INFORMATION

Respiration Protection (Specify Type) None should be needed in normal laboratory handling. If dusty conditions prevail, work in ventilation hood or wear a NIOSH/MSHA-approved dust mask or respirator.

Ventilation	Local Exhaust	Recommended.	Special	No.
	Mechanical (General)	Recommended.	Other	No.

Protective Gloves	Rubber.	Eye Protection	Chemical safety glasses.
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Other Protective Equipment Goggles, eye wash station, lab coat, fire extinguisher, proper gloves, ventilation hood.

SECTION IX SPECIAL PRECAUTIONS

Precautions to be Taken in Handling & Storing Store in a cool, dry place away from easily oxidizable materials, such as oils and grease. Wash thoroughly after handling. Keep container tightly closed when not in use.

Other Precautions Read label on container before using. Do not wear contact lenses when working with chemicals. Avoid contact with eyes, skin and clothing. Use adequate ventilation. Remove and wash contaminated clothing.

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

Revision No. 5	Date 3/25/99	Approved Michael Raszeja	Chemical Safety Coordinator MR
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The information contained herein is furnished without warranty of any kind. Employees should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. * Hazardous Materials Industrial Standards. Printed on recycled paper.

SECTION I NAME 24 HOUR EMERGENCY ASSISTANCE

Product	MANGANESE DIOXIDE, 85%
Chemical Synonyms	Manganese Peroxide, 85%, Native Powder
Formula	MnO ₂
Unit Size	up to 2.5 Kg.
C.A.S. No.	1313-13-9

0
3
0

CHEMTREC
800-424-9300
Day 716-226-6177

Health	3
Fire	0
Reactivity	0

NFPA HAZARD RATING

LEAST	SLIGHT	MODERATE	HIGH	EXTREME
0	1	2	3	4

HMIS *

0	1	2	3	4
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SECTION II INGREDIENTS OF MIXTURES

Principal Component(s)	%	TLV Units
Manganese Dioxide (Natural Product)	85%	See Section V.

WARNING! STRONG OXIDIZER. HARMFUL IF SWALLOWED OR INHALED. CAN CAUSE NERVOUS SYSTEM INJURY.

SECTION III PHYSICAL DATA

Melting Point (°F)	Decomposes @ 535°C (995°F)	Specific Gravity (H₂O = 1)	5.026 @ 20°C
Boiling Point (°F)	Decomposes @ 535°C (995°F)	Percent Volatile by Volume (%)	N/A
Vapor Pressure (mm Hg)	Negligible as solid.	Evaporation Rate (n-Butyl Ac. =1)	N/A
Vapor Density (Air=1)	Data not listed.		
Solubility in Water	Insoluble in water.		
Appearance & Odor	Brown black powder; no odor.		

SECTION IV FIRE AND EXPLOSION HAZARD DATA

Flash Point (Method Used)	Non-flammable.	Flammable Limits in Air % by Volume	N/A	Lower	Upper
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Extinguisher Media Water spray; carbon dioxide (CO₂); dry chemical.

SPECIAL FIREFIGHTING PROCEDURES

In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and protective clothing.

(1996 EMERGENCY RESPONSE GUIDEBOOK, DOT P 5800.7, GUIDE PAGE NO. 140)

UNUSUAL FIRE AND EXPLOSION HAZARDS

Moderate fire hazard, by chemical reaction. 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.

D.O.T. Oxidizing solid, n.o.s., (Manganese dioxide). 5.1, UN 1479, PG III

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