

# SAFETY DATA SHEET

MnO2 Resin SDS - Bulk and Cartridge

Revision Date: 04-Jun-15

## Section 1: Chemical Product and Company Identification

Product Name: MnO2 Resin  
Product Number(s): MN-B01-A, MN-B100-A, MN-R01-A, MN-R50-A  
Product Synonym(s): MnO2 Resin  
Identified Uses: Laboratory chemicals, manufacture of substances  
Manufacturer: Eichrom Technologies LLC  
1955 University Lane  
Lisle, Illinois 60532  
General Information: (8-5 CST M-F)  
800-422-6693 (in USA)  
630-963-0320

### 24 Hour Emergency Number:

**CHEMTREC: 800-424-9300**

## Section 2: Hazard(s) Identification



GHS Signal Word: **Warning**  
GHS Classification of substance or mixture:  
Skin Irritant  
Mild Eye Irritant  
Respiratory Tract Irritation  
Acute toxicity, Oral (Category 4)  
Acute toxicity, Inhalation (Category 4)

### Hazard Statement(s):

H315 Causes skin irritation  
H320 Causes eye irritation  
H335 May cause respiratory irritation  
H302 Harmful if swallowed  
H332 Harmful if inhaled

### Prevention:

P261 Avoid breathing dust.  
P264 Wash hands thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P271 Use only outdoors or in a well-ventilated area.  
P280 Wear protective gloves, clothing, and eye protection.

### Response:

P301+P312+P330 IF SWALLOWED: Call a POISON CONTROL CENTER or doctor if you feel unwell.  
P302+P352 IF ON SKIN: Wash with plenty of soap and water.  
P304+P340+P312 IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.  
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P332+P313 If skin irritation occurs, seek medical attention.  
P337+P313 If eye irritation persists, get medical attention.  
P362+P364 Take off contaminated clothing and wash before reuse.

### Storage:

P403+P233 Store in a well-ventilated place. Keep container tightly closed.  
P405 Store locked up.

### Disposal:

P501 Dispose of contents/container in accordance with federal, state, and local regulations.

**Section 3: Composition / Information on Ingredients**

Component	CAS_Number	Percentage Range
Proprietary Material	Trade secret	40-60%
De-ionized water	007732-18-5	25-40%
Manganese (IV) Oxide	1313-13-9	10-30%

**Section 4: First-aid Measures**

General Advice	The hazardous properties of this material have not been established. Treat material as if it were toxic when evaluating first aid requirements.
Ingestion	Rinse mouth and call a POISON CONTROL CENTER or doctor if you feel unwell.
Skin Contact	Wash immediately with soap and copious amounts of water. Remove and wash contaminated clothing promptly. If irritation develops, seek medical attention.
Eye Contact	Irrigate immediately with water for 15 minutes. Mechanical irritation is possible; seek medical attention.
Inhalation	Remove to fresh air. If breathing is labored, administer oxygen. If not breathing, give artificial respiration. Seek medical attention.
Most important symptoms and effects, both acute and delayed	The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11. Further important symptoms and effects are so far not known.
Indication of any immediate medical attention and special treatment needed	Treat according to symptoms (decontamination, vital functions), no known specific antidote.

**Section 5: Firefighting Measures**

Extinguishing Media	Foam, CO2, Dry Chemical
Fire and Explosion Hazards	Polymer does not support flame. Highly toxic and irritating fumes may be released and extinguishing water runoff may be toxic. Vapors may be heavier than air. They can spread along the ground and collect in low or confined areas.
Protective Equipment	Oxidizer. Greatly increases the burning rate of combustible materials. Wear positive pressure self-contained breathing apparatus and full personal protective equipment.
Special Hazards	Possible combustion products include carbon oxides, nitrogen oxides, chlorine

**Section 6: Accidental Release Measures**

Personal precautions	Use proper personal protect equipment (specified in section 8) Surface may be slippery.
Environmental Precautions	Avoid release to the environment
Methods and materials for containment and clean-up	Ventilate area and wash spill site after material pickup is complete. Sweep up material and transfer to a suitable container for disposal.
Reference to other sections	For disposal see section 13.

**Section 7: Handling and Storage**

Specific End Use(s)	Apart from the uses mentioned in section 1 no other specific uses are stipulated.
Conditions for safe handling	Use mechanical exhaust if dust is formed.
Conditions for safe storage	Keep away from strong oxidizers. Normal warehouse storage in cool, dry area is satisfactory.

**Section 8: Exposure Controls / Personal Protection**

Engineering Controls	Mechanical exhaust is required.
Exposure Controls	Do not eat, drink or smoke when using this product Avoid contact with skin, eyes, and clothing. Wash hands before breaks and immediately after handling the product.
Eye protection	Wear safety glasses.
Skin Protection	Wear impervious gloves and clean body-covering clothing.
Respiratory protection	Do not breathe dust. Use NIOSH/MSHA approved respirator when handling material outside of mechanical exhaust. An air-purifying respirator with an organic vapor cartridge or canister may be permissible.

**Section 9: Physical Properties**

## Information on basic physical and chemical properties

Appearance:	Solid Black	Explosion Limits (Upper/Lower):	Not Applicable
Odor:	low to none	Flash Point:	Not Applicable
Odor Threshold:	Not Established	Flammability:	Not flammable until all moisture is removed.
pH:	Not applicable	Autolgnition Temperature:	Not Applicable
Melting Point:	0 °C (water); not established for solid.	Decomposition Temperature	Not Applicable
Boiling Point:	100 °C (water); not established for solid.	VaporPressure:	Not Applicable
Relative Density:	1.17 g/mL at 20°C	VaporDensity:	Not Applicable
Solubility:	Insoluble in water	Evaporation Rate:	Not Established
Partition Coefficient:	Not Applicable		
Viscosity:	Not Applicable		

**Section 10: Stability and Reactivity**

Reactivity	Incompatible with chlorates, chlorine trifluoride, hydrogen peroxide, permonosulfuric acid, potassium azide, rubidium acetylene, carbide, and sodium peroxide. No hazardous reactions if stored and handled as indicated.
Chemical Stability	Stable under normal handling and storage conditions.
Hazardous reactions	Reacts with flammable substances. Reacts with strong oxidizing agents.
Conditions to Avoid	Exposure to elevated temperatures can cause product to decompose.
Materials to Avoid	Keep away from combustible material, organic material, reducing agents, strong acids, and incompatible materials listed above. Contact with strong oxidizers will degrade material.
Hazardous decomposition Products	Decomposition products depend upon temperature, air supply, and the presence of other materials. Decomposition products can include and are not limited to: Chlorinated hydrocarbons, aromatic compounds, hydrocarbons, hydrogen chloride, and organic amines

**Section 11: Toxicology Information**

Acute Toxicity	
Oral Effects	MnO2, Oral LD50 > 3,478 mg/kg (rat) May cause abdominal pain and nausea. Although manganese salts are poorly absorbed through the intestines, they may produce hypoglycemia, and decreased blood calcium levels could absorption occur.
Inhalation Effects	Inhalation LC50 has not been determined. Vapors are unlikely due to physical properties, however if dust from MnO2 Resin is observed, avoid inhaling.
Dermal Effects	Dermal LD50 has not been determined.
Skin corrosion/irritation	Prolonged exposure will cause skin irritation.
Serious eye damage/irritation	Solid or dust may cause irritation or corneal injury due to mechanical action.
Respiratory or skin sensitization	No data available regarding respiratory sensitization effects of this product. Repeated inhalation of manganese dust may cause Manganese Pneumonitis, bronchitis with cough, phlegm, and/or shortness of breath.
Germ Cell Mutagenicity	No data available regarding mutagenic effects of this product.
Carcinogenicity	No data available regarding carcinogenic effects of this product.
Reproductive Toxicity	Special Remarks regard effects on Humans: May cause adverse reproductive effects. Decrease of sperm count in human.
Specific Target Organ Toxicity	
Single Exposure	No data available regarding specific target organ toxicity single exposure.

Repeated Exposure	Chronic effects on Humans: May cause damage to the following organs: blood, the nervous system, liver, central nervous system (CNS).
	Chronic exposure to Manganese dioxide can lead to manganese poisoning, called manganism. It primarily involves the central nervous system. Early symptoms include languor, sleepiness, poor appetite, and weakness in legs. Later effects which may include a stolid mask-like appearance of the face, muscle cramps, twitching and tremors, changes in mood and personality, emotional disturbances such as uncontrollable laughter and a spastic gait with tendency to fall while walking as well as anemia are also findings in workers exposed to dust or fumes of manganese compounds. Later symptoms are identical to Parkinson's disease.
	Repeated or prolonged exposure may also damage the liver and may cause a decrease in the hear rate.

## Aspiration Hazard

No data available regarding the aspiration hazard of this product.

**Section 12: Ecological Information**

Aquatic Toxicity	*The product has not been tested. The statement has been derived from the properties of individual components using an additivity method.
Persistence and degradability	No data are available for persistence and degradability.
Bioaccumulative potential	No data are available for bioaccumulative potential.
Mobility in Soil	No data are available for mobility in soil.
PBT/vPvB assessment	PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.
Other	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Very toxic to aquatic life with long lasting effects.

**Section 13: Disposal Considerations**

General	Dispose of contents/container in accordance with federal, state, and local regulations.
Unused:	Bury resin in licensed landfill or burn in approved incinerator equipped with an afterburner and scrubber according to local, state, and federal regulations.
Used:	For resin contaminated with hazardous materials, dispose of mixture as hazardous material according to local, state, and federal regulations.

**Section 14: Transport Information**

Air Transport:	Not Hazardous per IATA 2014
Ground Transport:	Not D.O.T. Hazardous

**Section 15: Regulatory Information**

US Federal Regulations	Toxic Substances Control Act (TSCA): This material is provided to you under the research and development (R&D) exemption.
US State Regulations	A component, Manganese Dioxide [CAS 1313-13-9], is listed on the following state right to know lists: PA, NJ
Canada - DSL/NDSL	A component, Manganese Dioxide [CAS 1313-13-9], is listed on the Canadian DSL

**Section 16: Other Information**

SDS Prepared By:	Eichrom Technologies LLC
Revision	Updated to GHS SDS format, including classification

The information set forth herein has been gathered from standard reference materials and is to the best knowledge and belief of Eichrom Technologies LLC, accurate and reliable. Such information is offered solely for your consideration, investigation and verification, and does not suggest or guarantee that the hazard precautions or procedures mentioned are the only ones that exist. Eichrom Technologies LLC makes no warranties, express or implied, with respect to the use of such information or the use of the specific material identified herein in combination with any other material or process, and assumes no responsibility therefore.