

MATERIAL SAFETY DATA SHEET

NFPA	HMIS	Personal Protective Equipment						
	<table border="1"> <tr> <td>Health Hazard</td> <td style="text-align: center;">1</td> </tr> <tr> <td>Fire Hazard</td> <td style="text-align: center;">0</td> </tr> <tr> <td>Reactivity</td> <td style="text-align: center;">0</td> </tr> </table>	Health Hazard	1	Fire Hazard	0	Reactivity	0	
Health Hazard	1							
Fire Hazard	0							
Reactivity	0							
See Section 8.								

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION	
Product code:	M1037
Product Name:	MANGANESE OXIDE, -60 MESH
Chemical Name:	Manganese(II) oxide
Synonyms:	C.I. 77726 Cassel Green Manganese Green Manganese monooxide Manganese monoxide Manganous oxide NU-Manese Rosensthiel
Recommended use:	Catalyst Analytic Chemistry Fertilizer compositons Paints Ceramics Textile printing Colored glass Bleaching agent Varnishes Inks Dyes
CAS #:	1344-43-0
Formula:	MnO
RTECS #	OP0900000
CI#:	Not available
Supplier:	Spectrum Chemicals and Laboratory Products, Inc. 14422 South San Pedro St. Gardena, CA 90248 (310) 516-8000
Emergency Telephone Number:	CHEMTREC: 1-800-424-9300
Contact Person:	Martin LaBenz (West Coast)

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Contact Person: Chris Terpak (East Coast)

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

May be harmful if swallowed. May cause skin and eye irritation. May cause irritation of respiratory tract.

Odor:
No information available

Physical state:
Solid.

Appearance:
Powder.

Color:
Green. Dark green.

OSHA Regulatory Status

This material is not considered hazardous by the OSHA Hazard Communication Standard (29 1910.1200)

POTENTIAL HEALTH EFFECTS

Principal Routes of Exposure:

Ingestion. Inhalation.

Acute Potential Health Effects:

Skin Contact:

May cause skin irritation.

Eye Contact:

May cause eye irritation.

Inhalation:

May cause irritation of respiratory tract. May cause central nervous system effects. May cause inflammation of the lungs (pneumonitis). May cause "Metal Fume Fever".

Ingestion:

May be harmful if swallowed. May cause digestive (gastrointestinal) tract irritation. May cause abdominal pain. May cause methemoglobinemia. It may affect the kidneys. May cause central nervous system effects.

Chronic Potential Health Effects:

Target Organs: Central nervous system. Lungs.

Carcinogen Status: No information available

Mutagenic Effects: No information available

Teratogenic Effects: No information available

Aggravated Medical Conditions: No information available

See Section 11 for additional Toxicological Information

POTENTIAL ENVIRONMENTAL EFFECTS

No information available

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS-No.	Weight %
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3. COMPOSITION/INFORMATION ON INGREDIENTS

Manganese Oxide	1344-43-0	100
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4. FIRST AID MEASURES

General Advice:	Poison information centres in each State capital city can provide additional assistance for scheduled poisons (13 1126)
Skin Contact:	Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Get medical attention if irritation develops.
Eye Contact:	Flush eye with water for 15 minutes. Get medical attention if irritation occurs. If symptoms persist, call a physician.
Inhalation:	Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
Ingestion:	Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Consult a physician if necessary.
Notes to Physician:	Treat symptomatically

5. FIRE-FIGHTING MEASURES

Flammable Properties

Flashpoint (°C/°F):	Not applicable.
Lower Explosion Limit (%):	No information available
Upper Explosion Limit (%):	No information available
Autoignition Temperature (°C/°F):	No information available

Suitable Extinguishing Media:	Not applicable.
Unsuitable Extinguishing Media:	No information available.
Hazardous Combustion Products:	No information available.
Specific hazards:	Not applicable.. The product is not flammable.
Special Protective Equipment for Firefighters:	As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear
Specific Methods:	No information available.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions:

Ensure adequate ventilation. Use personal protective equipment. Avoid contact with skin, eyes and clothing. Avoid dust formation.

Environmental Precautions:

No information available.

Methods for Cleaning Up:

Sweep up and shovel into suitable containers for disposal. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Handling**Technical Measures/Precautions:**

Provide sufficient air exchange and/or exhaust in work rooms. Avoid dust formation. Keep away from incompatible materials.

Safe Handling Advice:

Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Do not ingest. Do not breathe vapours/dust. Handle in accordance with good industrial hygiene and safety practice.

Storage**Technical Measures/Storage Conditions:**

Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container. Store away from incompatible materials.

Incompatible Products:

Oxidizing agents.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering measures to reduce exposure:

Ensure adequate ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protective Equipment

Eye protection: Safety glasses. Safety glasses with side-shields.

Skin and body protection: Long sleeved clothing. Chemical resistant apron. Gloves.

Respiratory protection: Effective dust mask. Wear respirator with dust filter..

Hygiene measures: Avoid contact with skin, eyes and clothing. Wash hands and face before breaks and immediately after handling the product. When using, do not eat, drink or smoke.

National occupational exposure limits**United States**

U.S Occupational Exposure Limits: Not determined

Components	OSHA	NIOSH	ACGIH	AIHA WHEEL
Manganese Oxide - 1344-43-0	5 mg(Mn)/m ³ Ceiling	1.0 mg(Mn)/m ³ TWA 3 mg(Mn)/m ³ STEL 500 mg(Mn)/m ³ IDLH	0.2 mg (Mn)/m ³ TWA	not determined

Canada

Canada Occupational Exposure Limits: Not determined

Components	Alberta	British Columbia	Quebec	Ontario
Manganese Oxide 1344-43-0	0.2 mg(Mn)/m ³ TWA	0.2 mg(Mn)/m ³ TWA	5 mg(Mn)/m ³ TWA	0.2 mg(Mn)/m ³ TWA

Australia and Mexico

Occupational Exposure Limits for Australia and Mexico: Not determined

Components	Australia	Mexico
Manganese Oxide 1344-43-0	1 mg/m ³ TWA	0.2 mg(Mn)/m ³ TWA

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:

Solid

Appearance:

Powder.

Color:

Green. Dark green.

Odor:

No information available

Taste

No information available

Molecular weight:

70.94

Flash point (°C) :

Not determined

Lower Explosion Limit (%):

No information available

Upper Explosion Limit (%):

No information available

Autoignition Temperature (°C/°F):

No information available

pH:

No information available

Boiling point/range(°C/°F):

No information available

Melting point/range(°C/°F):

1840 °C/3344 °F

Decomposition temperature(°C/°F):

No information available

Specific gravity:

No information available

Density (g/cm³):

5.37 @ 20 °C

5.45 @ 25 °C

Bulk density:

No information available

Vapor pressure @ 20°C (kPa):

No information available

Vapor density:

No information available

Evaporation rate:

No information available

VOC content (g/L):

No information available

Odor threshold (ppm):

No information available

Partition coefficient

(n-octanol/water):

No information available

Miscibility:

No information available

Solubility:

Insoluble in water

Soluble in acid

10. STABILITY AND REACTIVITY

Stability:

Stable at normal conditions

Conditions to avoid:

Avoid dust formation.

Materials to avoid:

Strong oxidising agents.

Hazardous decomposition products:

Manganese oxides.

Possibility of Hazardous Reactions:

Violent reaction with Hydrogen Peroxide. Violent reaction with Calcium Hypochlorite Ca(OCl)₂. Violent reaction with Fluorine.

Polymerization:

Hazardous polymerisation does not occur

Corrosivity:

No information available

Special Remarks on Corrosivity: No information available

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Component Information

Manganese Oxide - 1344-43-0

- LD50/oral/rat** = No information available
- LD50/oral/mouse** = = 1000 mg/kg Oral LD50 Mouse
- LD50/dermal/rabbit** = Not determined
- LD50/dermal/rat** = No information available
- LC50/inhalation/rat** = No information available
- LC50/inhalation/mouse** = No information available

Product Information

- LC50/inhalation/rat** = No information available
- LC50/Inhalation/mouse** = No information available
- LD50/dermal/rabbit** = No information available
- LD50/dermal/rat** = Not information available
- LD50/oral/rat** = No information available
- LD50/oral/mouse** = 1000 mg/kg

Local Effects

- Skin irritation:** May cause skin irritation.
- Eye irritation:** Contact with eyes may cause irritation.
- Inhalation:** May cause irritation of respiratory tract. May cause inflammation of the lungs (pneumonitis) which is characterized by the onset of pneumonia, intense shortness of breath (dyspnea), and high body temperature. May cause "Metal Fume Fever" which is characterized by flu-like symptoms including fever, chills, coughing, difficulty breathing, nausea, headache, fatigue, muscle aches, and joint pains. Other symptoms may include a sweet or metallic taste in the mouth along with a dry or irritated throat. Symptoms such as a burning sensation in the body, convulsions, shortness of breath, vomiting, watery or bloody diarrhea, rash, yellow eyes or skin, low blood pressure, no urine output and shock are rare and require prompt medical attention..
- Ingestion:** May be harmful if swallowed. May cause digestive (gastrointestinal) tract irritation. May cause abdominal pain. May affect urinary system (kidneys). May cause central nervous system effects.
- Sensitization:** No information available

Chronic Toxicity

- Chronic Toxicity** Prolonged or repeated inhalation may affect behavior/central nervous system (compulsive behavior, hallucinations, nervousness, irritability). Repeated or prolonged inhalation may affect the blood (decreased hemoglobin and red blood cells).
- Carcinogenic effects:** No information available

Mutagenic Effects: No information available
Reproductive Effects: No information available
Teratogenic Effects: No information available
Target Organs: Central nervous system. Lungs.

12. ECOLOGICAL INFORMATION

ECOTOXICITY

Toxicity to terrestrial and aquatic plants and animals: No information available
Ecotoxicity effects: No data available
Aquatic toxicity: No information available
Mobility: No information available
Persistence and degradability: No information available
Bioaccumulative potential: No information available

13. DISPOSAL CONSIDERATIONS

Waste from residues / unused products:

Waste must be disposed of in accordance with Federal, State and Local regulation.

Contaminated packaging:

Empty containers should be taken for local recycling, recovery or waste disposal

Components	RCRA - F Series Wastes	RCRA - K Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
Manganese Oxide	None	None	None	None

14. TRANSPORT INFORMATION

DOT

UN-No: Not regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Packing Group: None
Subsidiary Risk: Not applicable
Marine Pollutant: No data available
ERG No: No information available
DOT RQ (lbs): No information available
Transport Regulation Logo:

TDG (Canada)

Proper Shipping Name: No information available
UN-No: Not regulated
Hazard Class: No information available

Packing Group: No information available
Subsidiary Risk: No information available
Description: No information available

ADR

Proper Shipping Name: No information available
UN-No: Not regulated
Hazard Class: No information available
Packing Group: No information available
Subsidiary Risk: No information available
Classification Code: No information available
Description: No information available
CEFIC Tremcard No: No information available

IMO / IMDG

Proper Shipping Name: No information available
UN-No: Not regulated
Hazard Class: No information available
Subsidiary Risk: No information available
Packing Group: No information available
Description: No information available
IMDG Page: No information available
Marine Pollutant: No information available
MFAG: No information available
Maximum Quantity: No information available

RID

Proper Shipping Name: No information available
UN-No: Not regulated
Hazard Class: No information available
Packing Group: No information available
Subsidiary Risk: No information available
Classification Code: No information available
Description: No information available

ICAO

UN-No: Not regulated
Hazard Class: No information available
Proper Shipping Name: No information available
Packing Group: No information available
Subsidiary Risk: No information available
Description: No information available

IATA

Proper Shipping Name: No information available
UN-No: Not regulated
Hazard Class: No information available
Packing Group: No information available
Subsidiary Risk: No information available
Description: No information available

15. REGULATORY INFORMATION

International Inventories

Components	U.S. TSCA	Philippines (PICCS)	KOREA KECL	Japan ENCS	CHINA	Australia (AICS)	EINECS-No.
<i>Manganese Oxide</i>	Present	Present	KE-23031	1-475	Present	Present	215-695-8

U.S. Regulations

Manganese Oxide

New Jersey RTK: Present (sn 2324) as Manganese compounds

New Jersey (EHS) List: Present (sn2324) as Manganese compounds

New Jersey - Discharge Prevention - List of Hazardous Substances Present as Manganese compounds

Pennsylvania RTK - Environmental Hazard List: Present as Manganese compounds

Minnesota - Hazardous Substance List: Present as Manganese compounds

California Directors List: Present as Manganese compounds

California Prop. 65: Safe Drinking Water and Toxic Enforcement Act of 1986.

Chemicals Known to the State of California to Cause Cancer:

WARNING: This product contains a chemical known to the State of California to cause cancer. (See table below)

Chemicals Known to the State of California to Cause Reproductive Toxicity:

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Components	Carcinogen	Developmental Toxicity	Male Reproductive Toxicity	Female Reproductive Toxicity:
Manganese Oxide	Not Listed	Not Listed	Not Listed	Not Listed

CERCLA/SARA

Components	CERCLA - Hazardous Substances and their Reportable Quantities	Section 302 Extremely Hazardous Substances and TPQs	Section 302 Extremely Hazardous Substances and RQs	Section 313 - Chemical Category	Section 313 - Reporting <i>de minimis</i>
Manganese Oxide	None	None	None	Manganese Compounds	1.0 %

U.S. TSCA

Components	TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)	TSCA 8(d) -Health and Safety Reporting
Manganese Oxide	Not Applicable	Not Applicable

Canada

WHMIS hazard class:

Non-controlled

Components	WHMIS Ingredient Disclosure List -
Manganese Oxide	1% for Manganese

Inventory

Components	Canada (DSL)	Canada (NDSL)
Manganese Oxide	Present	Not Listed

EU Classification

R -phrase(s)

R22 - Harmful if swallowed.

S -phrase(s)

S46 - If swallowed, seek medical advice immediately and show this container or label.

The product is classified in accordance with Annex VI to Directive 67/548/EEC

Contains: Manganese Oxide

Indication of danger:

Xn - Harmful.

Xn

**16. OTHER INFORMATION**

The MSDS format complies with ANSI Z400.1-2004 standards.

Revision date: 05-Mar-2010

Reason for revision: Not applicable

Additional advice: Consult your supplier if the material is to be used for special applications such as in the food industry or for hygiene, medical or surgical end-use.

Prepared by: Health & Safety

Literature reference: No information available

All chemicals may pose unknown hazards and should be used with caution. This Material Safety Data Sheet (MSDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this MSDS. The physical properties reported in this MSDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this MSDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.