



MANGANESE OXIDE Safety Data Sheet- MSDS

Update version -IV-

Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Identification of the substance Manganese Oxide 60%

Trade name Manganese Oxide 60%

CAS number 1344-43-0

Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses Food additive, Agricultural chemicals Welding and soldering product Zinc Electrolysis

SUPPLIER

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Section 2 - HAZARDS IDENTIFICATION

Classification of the substance or mixture

Classification acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)

Classification

Section	Hazard class	Category	Hazard class and category	Hazard statement
A.6	carcinogenicity	1A	Carc. 1A	H350

For full text of abbreviations: see SECTION 16

Label elements

Labelling acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200) Signal word danger

Pictograms

GHS08



Hazard statements

H350 May cause cancer.

Precautionary statements

P201 Obtain special instructions before use.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P308+P313 If exposed or concerned: Get medical advice/attention.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Other hazards

Results of PBT and vPvB assessment

According to the results of its assessment, this substance is not a PBT or a vPvB.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

Substances

Name of substance: manganese oxide

Identifiers

CAS No :1344-43-0

Molecular formula: MnO

Molar mass:70.94 g/mol

Purity:>80%

Impurities and additives

Name of substance	Identifier	Wt%
Aluminum oxide	CAS No 1344-28-1	< 10
Diiron trioxide	CAS No 1309-37-1	< 10
Silicon dioxide	CAS No 7631-86-9	< 10

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

Section 4 - FIRST AID MEASURES

Description of first-aid measures

General notes

Take off immediately all contaminated clothing.

In case of accident or if you feel unwell, seek medical advice immediately (show the label or safety data sheet where possible).

Following inhalation

Provide fresh air.

If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions.

Following skin contact

After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of water and soap.

If skin irritation or rash occurs: Get medical advice/attention.

Following eye contact

Rinse cautiously with water for several minutes.

Remove contact lenses, if present and easy to do. Continue rinsing. Get medical advice/attention.

Following ingestion

Rinse mouth. Do not induce vomiting.

Get medical advice/attention if you feel unwell.

Notes for the doctor

None.

Most important symptoms and effects, both acute and delayed

This information is not available.

Indication of any immediate medical attention and special treatment needed -None

Section 5 - FIRE FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media

water, foam, alcohol resistant foam, fire extinguishing powder

Unsuitable extinguishing media

water jet

Special hazards arising from the substance or mixture

Hazardous decomposition products: Section 10.

Hazardous combustion products

metal oxides, (manganese)

Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Coordinate firefighting measures to the fire surroundings.

Do not allow firefighting water to enter drains or water courses. Collect contaminated firefighting water separately.

Fight fire with normal precautions from a reasonable distance.

Special protective equipment for firefighters

Use suitable breathing apparatus

Section 6 - ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Remove persons to safety.

Ventilate affected area.

Do not breathe dust.

Wearing of suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing.

For emergency responders

Wear breathing apparatus if exposed to vapors/dust/aerosols/gases.

Environmental precautions

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it.

If substance has entered a water course or sewer, inform the responsible authority. Stop leak if safe to do so.

Methods and material for containment and cleaning up

Advice on how to contain a spill

Take up mechanically.

Advice on how to clean up a spill

Take up

mechanically.

Collect spillage.

Other information relating to spills and releases

Place in appropriate containers for disposal.

Ventilate affected area.

Reference to other sections

Hazardous combustion products: see section 5.

Personal protective equipment: see section 8.

Incompatible materials: see section 10.

Disposal considerations: see section 13.

Section 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.

Section 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

Canada: Canada 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

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

Section 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) <u>L</u>: 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		

Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

Stability:	Stable at normal conditions
Conditions to avoid:	Avoid dust formation.
Materials to avoid:	Strong oxidizing agents. Manganese oxides.
Hazardous decomposition products:	
Possibility of Hazardous Reactions:	Violent reaction with Hydrogen Peroxide. Violent reaction with Calcium Hypochlorite Ca(OCl) ₂ . Violent reaction with Fluorine.
Corrosivity	No Information available on corrosivity

Section 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 = No 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.

Section 12 – ECPLOGICAL INFORMATION

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

Bio accumulative potential: No information available

Section 13 - DISPOSAL INFORMATION

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

Section 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

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

Section 15 - REGULATORY INFORMATION

International Inventories

Components	U.S. TSCA	Philippines (PICCS)	KORE A KECL	Japa n ENC S	CHINA	Australia (AICS)	EINECS-No.
<i>Manganese Oxide</i>	Present	Present	KE-3031	1-475	Present	Present	215-695-8

U.S. Regulations

Manganese Oxide

New Jersey RTK: Present (sn 2324) as Mangenses 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>
<i>Manganese Oxide</i>	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
<i>Manganese Oxide</i>	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.



Section 16 - OTHER INFORMATION

The information in this SDS is based on sources believed to be reliable but is provided without warranty or guarantee of accuracy or completeness. The supplier makes no representations and disclaims all liability for use or reliance on this information. It is the recipient's responsibility to ensure safe, compliant use of the material for their specific application. Use of the material is at the recipient's own risk. No warranties, including merchantability or fitness for a particular purpose, are expressed or implied.

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