

SAFETY DATA SHEET

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifiers

Product name	Manganese dioxide
CAS number	1313-13-9
Synonyms	Manganese(IV) oxide, Manganese peroxide

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

Identified uses	Laboratory chemicals.
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1.3 Details of the supplier of the safety data sheet

Company	Lab Alley, LLC 12501 Pauls Valley Road Austin, Texas 78737 U.S.A.
Telephone	512-668-9918
Fax	512-886-4008

1.4 Emergency telephone

Emergency Phone #	US & Canada: 1-800-535-5053	INFOTRAC
	International 1-352-323-3500	INFOTRAC

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Acute oral toxicity (Category 4)
Acute inhalation toxicity - dusts and mists (Category 4)
Specific target organ toxicity - repeated exposure (Category 2)
Target Organs - Brain

2.2 GHS Label elements, including precautionary statements

Pictogram



Signal Word

Warning.

Hazard statements

May cause damage to organs through prolonged or repeated exposure

Harmful if swallowed or if inhaled

Precautionary statements

Wash face, hands and any exposed skin thoroughly after handling

Do not eat, drink or smoke when using this product

Use only outdoors or in a well-ventilated area

Do not breathe dust/fume/gas/mist/vapors/spray

Get medical attention/advice if you feel unwell

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

Call a POISON CENTER or doctor/physician if you feel unwell

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell

Rinse mouth

Store in a well-ventilated place. Keep container tightly closed

Store locked up

Dispose of contents/container to an approved waste disposal plant

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

None identified.

SECTION 3: Composition/information on ingredients

3.1 Components

Chemical name	Common name and synonyms	CAS number	Concentration
Manganese dioxide	Manganese(IV) oxide, Manganese peroxide	1313-13-9	> 98%

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice

If inhaled

Remove to fresh air. If breathing is difficult, give oxygen. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required.

In case of skin contact

Wash off immediately with plenty of water for at least 15 minutes. Get medical attention if symptoms occur.

In case of eye contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

If swallowed Do NOT induce vomiting. Call a physician or poison control center immediately.

4.2 Most important symptoms and effects, both acute and delayed

Neurological disorders.

4.3 Indication of any immediate medical attention and special treatment needed

Note to Physician: Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media No information available.

Unsuitable extinguishing media No information available.

5.2 Specific hazards arising from the substance or mixture

Keep product and empty container away from heat and sources of ignition.

5.3 Special protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

5.4 Further information

Flash Point No information available.

Autoignition Temperature No information available.

Explosion limits

Upper No information available.

Lower No information available.

Sensitivity to Mechanical Impact No information available.

Sensitivity to Static Discharge No information available.

NFPA

Health	Flammability	Instability	Physical hazards
2	1	0	OX

SECTION 6: Accidental release measures

- 6.1 Personal precautions, protective equipment and emergency procedures**
Use personal protective equipment as required. Ensure adequate ventilation. Avoid dust formation. Avoid contact with skin, eyes, or clothing.
- 6.2 Environmental precautions**
Avoid release to the environment. See Section 12 for additional Ecological Information.
- 6.3 Methods and materials for containment and cleaning up**
Sweep up and shovel into suitable containers for disposal. Avoid dust formation.
- 6.4 Reference to other sections**
See Section 2 for full list of hazard and precaution statements.

SECTION 7: Handling and storage**7.1 Precautions for safe handling****Precautions on safe handling**

Use only under a chemical fume hood. Wear personal protective equipment/face protection. Avoid dust formation. Do not breathe (dust, vapor, mist, gas). Do not ingest. If swallowed then seek immediate medical assistance. Avoid contact with skin, eyes or clothing.

Hygiene measures

Handle in accordance with good industrial hygiene and safety practice.

7.2 Conditions for safe storage, including any incompatibilities**Storage conditions**

Keep containers tightly closed in a dry, cool and well-ventilated place.

Incompatibilities

Reducing Agent, Finely powdered metals.

SECTION 8: Exposure controls/personal protection**8.1 Occupational exposure limits****US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)**

Component	Type	Value
Manganese dioxide	Ceiling	5 mg/m ³

US. ACGIH Threshold Limit Values

Component	Type	Value
Manganese dioxide	TWA	0.02 mg/m ³ 0.1 mg/m ³

US. NIOSH: Pocket Guide to Chemical Hazards

Component	Type	Value
Manganese dioxide	IDLH	500 mg/m ³
	TWA	1 mg/m ³
	STEL	3 mg/m ³

Biological occupational exposure limits

No information available.

8.2 Exposure controls

Appropriate engineering controls

Use only under a chemical fume hood. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protective equipment

Eye/face protection

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin protection

Wear appropriate protective gloves.

Body Protection

Wear appropriate clothing to prevent skin exposure.

Respiratory protection

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced. Recommended Filter type: Particulates filter conforming to EN 143.

Control of environmental exposure

Do not let product enter the drains.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical State

Solid

Appearance

Dark grey

Odor	Odorless
Odor Threshold	No information available.
pH	Not applicable.
Melting Point/Range	535 °C / 995 °F
Boiling Point/Range	No information available.
Evaporation Rate	Not applicable.
Flammability (solid)	No information available.
Flammability or explosive limit	
Upper	No information available.
Lower	No information available.
Vapor Pressure	No information available.
Vapor Density	Not applicable.
Density	No information available.
Solubility	Insoluble in water.
Partition coefficient; n-octanol/water	No information available.
Autoignition Temp	No information available.
Decomposition Temp	535 °C
Viscosity	Not applicable.
Molecular Formula	MnO2
Molecular Weight	86.94
VOC Content(%)	No information available.
Oxidizing properties	No information available.

9.2 Other safety information

No information available.

SECTION 10: Stability and reactivity

10.1 Reactivity

None known, based on information available.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

None under normal processing.

10.4 Conditions to avoid

Incompatible products. Excess heat. Avoid dust formation.

10.5 Incompatible materials

Reducing agents, Finely powdered metals.

10.6 Hazardous decomposition products

None under normal use conditions.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Product Information, Component Information

Acute toxicity

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Manganese dioxide	> 3480 mg/kg (rat)	Not listed	> 1500 mg/m3 (rat)

Skin corrosion/irritation

Irritating to respiratory system.

Serious eye damage/eye irritation

No information available.

Respiratory or skin sensitization

No information available.

Germ cell mutagenicity

No information available.

Carcinogenicity

Component	CAS	IARC	NTP	ACGIH	OSHA	Mexico
Manganese dioxide	1313-13-9	Not listed	Not listed	Not listed	Not listed	Not listed

Specific target organ toxicity - single exposure

None known.

Specific target organ toxicity - repeated exposure

Brain.

Reproductive toxicity

No information available.

Chronic effects

No information available.

11.2 Additional Information

The toxicological properties have not been fully investigated.

SECTION 12: Ecological information

12.1 Toxicity

Do not empty into drains.

12.2 Persistence and degradability

Insoluble in water. Persistence is unlikely.

12.3 Bio accumulative potential

None components in this material are likely bioaccumulate.

12.4 Mobility in soil

Is not likely mobile in the environment due to its low water solubility.

12.5 Results of PBT and vPvB assessment

No information available.

12.6 Endocrine disrupting properties

No information available.

12.7 Other adverse effects

No information available.

SECTION 13: Disposal considerations

13.1 Waste Disposal Methods

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

SECTION 14: Transport information

DOT (US)

Not regulated.

IMDG

Not regulated.

IATA

Not regulated.

SECTION 15: Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency release notification

Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous

Not listed.

SARA 313 (TRI reporting)

Regulated. Manganese dioxide (1313-13-9). Weight: 80-100%,
Threshold values: 1.0%.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Regulated.

Safe Drinking Water Act

Not regulated.

**FEMA Priority Substances Respiratory Health and Safety in the Flavor
Manufacturing Workplace**

Not listed.

US state regulations

US. Massachusetts RTK - Substance List

Not listed.

US. New Jersey Worker and Community Right-to-Know Act

Listed.

US. Pennsylvania Worker and Community Right-to-Know Law

Listed.

California Proposition 65

Not listed.

SECTION 16: Other information

Issue date: 09/23/2024

SECTION 17: Disclaimer

The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.