

## SAFETY DATA SHEET

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

#### 1.1 Product identifiers

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

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

Identified uses            Laboratory chemicals.

#### 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

<b>Emergency Phone #</b>	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 Toxicity - Dermal	Category 4
Acute Toxicity - Inhalation	Category 4
Acute Toxicity - Oral	Category 4

#### 2.2 GHS Label elements, including precautionary statements

Pictogram	
Signal Word	Warning
Hazard statements	Harmful if swallowed; harmful if inhaled.
Precautionary statements	<p>If medical advice is needed, have product container or label at hand.          Keep out of reach of children.          Read label before use.          Do not eat, drink, or smoke when using this product.          Avoid breathing dust/fume/gas/mist/vapours/spray.          Wash skin thoroughly after handling.          Use only outdoors or in a well-ventilated area.          Dispose of contents and container to an approved waste disposal plant.</p> <p>IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth.</p> <p>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.</p>

### 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(IV) oxide	Manganese dioxide	1313-13-9	>98 %

## SECTION 4: First aid measures

### 4.1 Description of first-aid measures

#### General advice

**If inhaled** Loosen clothing as necessary and position individual comfortably. Move exposed to fresh air. Give artificial respiration if necessary. If breathing is difficult, give oxygen. Get medical attention if cough or other symptoms appear.

**In case of skin contact** Rinse/flush exposed area gently using soap and water for 15-20 minutes. Seek medical advice if discomfort or irritation persists.

**In case of eye contact** Protect unexposed eye. Rinse/flush exposed eye(s) gently using water for 15-20 minutes. Remove contact lens(es) if able to do so during rinsing. Seek medical attention if irritation persists or if concerned.

**If swallowed** Rinse mouth thoroughly. Do not induce vomiting. Have exposed individual drink sips of water. Seek medical attention if irritation, discomfort, or vomiting persists. Never give anything by mouth to an unconscious person.

#### 4.2 Most important symptoms and effects, both acute and delayed

Irritation, Nausea, Headache, Shortness of breath.

#### 4.3 Indication of any immediate medical attention and special treatment needed

If seeking medical attention, provide SDS document to physician. Physician should treat symptomatically.

### SECTION 5: Firefighting measures

#### 5.1 Extinguishing media

**Suitable extinguishing media** Use appropriate fire suppression agents for adjacent combustible materials.

**Unsuitable extinguishing media** No information available.

#### 5.2 Specific hazards arising from the substance or mixture

Combustion products may include carbon oxides or other toxic vapors. Thermal decomposition can lead to release of irritating gases and vapors.

#### 5.3 Special protective equipment and precautions for firefighters

Use NIOSH-approved respiratory protection/breathing apparatus. Precautions: Move product containers away from fire or keep cool with water spray as a protective measure, where feasible. Avoid inhaling gases, fumes, dust, mist, vapor, and aerosols. Avoid contact with skin, eyes, and clothing.

#### 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	0	0	0

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Wear protective equipment. Ensure that air-handling systems are operational. Ensure adequate ventilation.

### 6.2 Environmental precautions

Prevent from reaching drains, sewer, or waterway. Collect contaminated soil for characterization per Section 13. Should not be released into the environment.

### 6.3 Methods and materials for containment and cleaning up

Keep in suitable, closed containers for disposal. Wear protective eyewear, gloves, and clothing. Refer to Section 8. Always obey local regulations. Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Collect solids in powder form using vacuum with (HEPA filter). Evacuate personnel to safe areas.

### 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

Minimize dust generation and accumulation. Refer to Section 8. Do not eat, drink, smoke, or use personal products when handling chemical substances. Avoid contact with eyes, skin, and clothing.

#### Hygiene measures

Follow good hygiene procedures when handling chemical materials.

### 7.2 Conditions for safe storage, including any incompatibilities

#### Storage conditions

Protect from freezing and physical damage. Keep away from food and beverages. Provide ventilation for containers. Store in cool, dry conditions in well-sealed containers. Store with like-hazards.

#### Incompatibilities

No information available.

## 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	TWA	0.2 mg/m <sup>3</sup>

#### US. ACGIH Threshold Limit Values

Component	Type	Value
Manganese dioxide	TWA	0.02 mg/m <sup>3</sup>

#### US. NIOSH: Pocket Guide to Chemical Hazards

Component	Type	Value
Manganese dioxide	N/A	N/A
	N/A	N/A

#### Biological occupational exposure limits

No information available.

### 8.2 Exposure controls

#### Appropriate engineering controls

Emergency eye wash fountains and safety showers should be available in the immediate vicinity of use/handling. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapor or dusts (total/respirable) below the applicable workplace exposure limits (Occupational Exposure Limits - OELs) indicated above. It is recommended that all dust control equipment, such as local exhaust ventilation and material transport systems, involved in handling this product contain explosion relief vents, an explosion suppression system, or an oxygen deficient environment. Ensure that dust-handling systems such as exhaust dusts, dust collectors, vessels, and processing equipment are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment). Use under a fume hood.

#### Personal protective equipment

##### Eye/face protection

Wear equipment for eye protection tested and approved under appropriate government standards, such as NIOSH (US) or EN 166 (EU). Safety glasses or goggles are appropriate eye protection.

##### Skin protection

Select glove material impermeable and resistant to the substance. Select glove material based on rates of diffusion and degradation. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Use proper glove removal technique without touching outer surface. Avoid skin contact with used gloves. Wear protective clothing.

### Body Protection

Wear appropriate protective gloves and clothing to prevent skin exposure.

### Respiratory protection

Not required under normal conditions of use. Where risk assessment shows air-purifying respirators are appropriate, use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges, as a backup to engineering controls. When necessary use NIOSH approved breathing equipment.

### Control of environmental exposure

Perform routine housekeeping. Wash hands before breaks and at the end of work. Avoid contact with skin, eyes, and clothing. Before wearing, wash contaminated clothing.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

Physical State	Solid
Appearance	N/A
Odor	Not determined
Odor Threshold	Not determined
pH	Not determined
Melting Point/Range	535 °C (995 °F)
Boiling Point/Range	Not determined
Evaporation Rate	Not determined
Flammability (solid)	Not determined
Flammability or explosive limit	Not determined
Upper	
Lower	
Vapor Pressure	Not determined
Vapor Density	Not determined
Density	5.026 g/cm <sup>3</sup> (relative)
Solubility	N/A
Partition coefficient; n-octanol/water	Not determined
Autoignition Temp	Not determined
Decomposition Temp	Not determined
Viscosity	Not determined
Molecular Formula	MnO <sub>2</sub>
Molecular Weight	86.94 g/mol
VOC Content(%)	Not determined
Oxidizing properties	Not determined

### 9.2 Other safety information

No information available.

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

Nonreactive under normal conditions.

### 10.2 Chemical stability

Stable under normal conditions.

### 10.3 Possibility of hazardous reactions

None under normal processing.

### 10.4 Conditions to avoid

Incompatible materials.

### 10.5 Incompatible materials

Strong acids, strong bases, organic materials.

### 10.6 Hazardous decomposition products

No information available.

## 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	N/A	N/A	N/A

#### Skin corrosion/irritation

No additional information.

#### Serious eye damage/eye irritation

No additional information.

#### Respiratory or skin sensitization

No additional information.

#### Germ cell mutagenicity

No additional information.

#### Carcinogenicity

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

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**Specific target organ toxicity - single exposure**

No additional information.

**Specific target organ toxicity - repeated exposure**

No additional information.

**Reproductive toxicity**

No additional information.

**Chronic effects**

No additional information.

**11.2 Additional Information**

No additional information.

**SECTION 12: Ecological information****12.1 Toxicity**

No information available.

**12.2 Persistence and degradability**

No information available.

**12.3 Bio accumulative potential**

No information available.

**12.4 Mobility in soil**

No information available.

**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

<b>DOT (US)</b>	Not regulated.
<b>IMDG</b>	Not regulated.
<b>IATA</b>	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 applicable

**CERCLA Hazardous Substance List (40 CFR 302.4)**  
Not applicable

**SARA 304 Emergency release notification**  
Not regulated

**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**  
Acute

**SARA 313 (TRI reporting)**  
1313-13-9 N450 Manganese Compounds

### Other federal regulations

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

**Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)**  
Not regulated

**Safe Drinking Water Act**  
Not applicable

**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: 10/24/2014

Revision date: 09/03/2024

**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.