

## MATERIAL SAFETY DATA SHEET

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Version 1.3

## Section 1 - Product and Company Information

Product Name MANGANESE(II) ACETATE  
TETRAHYDRATE, 99+%

Product Number 221007

Brand ALDRICH

Company Sigma-Aldrich

Street Address 3050 Spruce Street

City, State, Zip, Country SAINT LOUIS MO 63103 US

Technical Phone: 314 771 5765

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## Section 2 - Composition/Information on Ingredient

Substance Name	CAS #	SARA 313
MANGANESE(II) ACETATE TETRAHYDRATE	6156-78-1	Yes

Formula (C<sub>2</sub>H<sub>3</sub>O<sub>2</sub>)<sub>2</sub>Mn.4H<sub>2</sub>O

Synonyms Manganese acetate tetrahydrate \* Manganese(II) acetate tetrahydrate \* Manganese diacetate, tetrahydrate \* Manganous acetate tetrahydrate

RTECS Number: AI5775000

## Section 3 - Hazards Identification

## EMERGENCY OVERVIEW

Harmful.

Harmful by inhalation, in contact with skin and if swallowed.  
Limited evidence of a carcinogenic effect. Irritating to eyes,  
respiratory system and skin.

Target organ(s): Central nervous system. Possible mutagen.

For additional information on toxicity, please refer to Section 11.

## Section 4 - First Aid Measures

## ORAL EXPOSURE

If swallowed, wash out mouth with water provided person is  
conscious. Call a physician.

## INHALATION EXPOSURE

If inhaled, remove to fresh air. If not breathing give  
artificial respiration. If breathing is difficult, give oxygen.

## DERMAL EXPOSURE

In case of contact, immediately wash skin with soap and copious  
amounts of water.

## EYE EXPOSURE

In case of contact, immediately flush eyes with copious amounts

of water for at least 15 minutes.

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## Section 5 - Fire Fighting Measures

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### FLASH POINT

N/A

### AUTOIGNITION TEMP

N/A

### FLAMMABILITY

N/A

### EXTINGUISHING MEDIA

Suitable: Water spray. Carbon dioxide, dry chemical powder, or appropriate foam.

### FIREFIGHTING

Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.  
Specific Hazard(s): Emits toxic fumes under fire conditions.

### EXPOSURE HAZARD(S)

Material: Irritant.

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## Section 6 - Accidental Release Measures

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### PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

### METHODS FOR CLEANING UP

Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

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## Section 7 - Handling and Storage

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### HANDLING

User Exposure: Do not breathe dust. Do not get in eyes, on skin, on clothing.

### STORAGE

Suitable: Keep tightly closed. Store in a cool dry place.

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## Section 8 - Exposure Controls / PPE

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### ENGINEERING CONTROLS

Safety shower and eye bath. Use only in a chemical fume hood.

### PERSONAL PROTECTIVE EQUIPMENT

Respiratory: Government approved respirator.

Hand: Rubber gloves.

Eye: Chemical safety goggles.

### GENERAL HYGIENE MEASURES

Wash thoroughly after handling. Wash contaminated clothing before reuse.

### EXPOSURE LIMITS, RTECS

Country	Source	Type	Value
USA	ACGIH	TWA	0.2 MG(MN)/M3

USA MSHA Standard-air Ceiling 5 MG(MN)/M3  
USA OSHA. PEL CL 5 MG(MN)/M3  
New Zealand OEL  
Remarks: check ACGIH TLV

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## Section 9 - Physical/Chemical Properties

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Appearance Color: Faintly red  
Form: Crystals

Property	Value	At Temperature or Pressure
Molecular Weight	245.09 AMU	
pH	N/A	
BP/BP Range	N/A	
MP/MP Range	300 °C	
Freezing Point	N/A	
Vapor Pressure	N/A	
Vapor Density	N/A	
Saturated Vapor Conc.	N/A	
SG/Density	1.589 g/cm3	
Bulk Density	N/A	
Odor Threshold	N/A	
Volatile%	N/A	
VOC Content	N/A	
Water Content	N/A	
Solvent Content	N/A	
Evaporation Rate	N/A	
Viscosity	N/A	
Surface Tension	N/A	
Partition Coefficient	N/A	
Decomposition Temp.	N/A	
Flash Point	N/A	
Explosion Limits	N/A	
Flammability	N/A	
Autoignition Temp	N/A	
Refractive Index	N/A	
Optical Rotation	N/A	
Miscellaneous Data	N/A	
Solubility	N/A	

N/A = not available

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## Section 10 - Stability and Reactivity

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### STABILITY

Materials to Avoid: Strong oxidizing agents, Strong acids, Strong bases.

### HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide.

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## Section 11 - Toxicological Information

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### ROUTE OF EXPOSURE

Inhalation: Material is irritating to mucous membranes and upper respiratory tract.

Multiple Routes: Harmful if swallowed, inhaled, or absorbed through skin. Causes eye and skin irritation.

### TARGET ORGAN(S) OR SYSTEM(S)

Nerves. Lungs.

## SIGNS AND SYMPTOMS OF EXPOSURE

Men exposed to manganese dusts showed a decrease in fertility. Chronic manganese poisoning primarily involves the central nervous system. Early symptoms include languor, sleepiness and weakness in the legs. A stolid mask-like appearance of the face, emotional disturbances such as uncontrollable laughter and a spastic gait with tendency to fall in walking are findings in more advanced cases. High incidence of pneumonia has been found in workers exposed to the dust or fume of some manganese compounds. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

## TOXICITY DATA

Oral  
Rat  
3730 mg/kg  
LD50

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## Section 12 - Ecological Information

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## Section 13 - Disposal Considerations

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## APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION

The material should be dissolved in: 1) water, 2) acid solution, or 3) oxidized to a water-soluble state. Precipitate the material as the sulfide, adjusting the pH of the solution to 7 to complete precipitation. Filter the insolubles and dispose of them in a hazardous waste site. Destroy any excess sulfide with sodium hypochlorite. Neutralize the solution before flushing down the drain. Observe all federal, state, and local environmental regulations.

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## Section 14 - Transport Information

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### DOT

Proper Shipping Name: None  
Non-Hazardous for Transport: This substance is considered to be non-hazardous for transport.

### IATA

Non-Hazardous for Air Transport: Non-hazardous for air transport.

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## Section 15 - Regulatory Information

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### EU ADDITIONAL CLASSIFICATION

Symbol of Danger: Xi  
Indication of Danger: Irritant.  
R: 36/37/38  
Risk Statements: Irritating to eyes, respiratory system and skin.  
S: 26 36  
Safety Statements: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing.

### US CLASSIFICATION AND LABEL TEXT

Indication of Danger: Harmful.  
Risk Statements: Harmful by inhalation, in contact with skin and

if swallowed. Limited evidence of a carcinogenic effect.  
Irritating to eyes, respiratory system and skin.  
Safety Statements: Wear suitable protective clothing. Do not breathe dust. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
US Statements: Target organ(s): Central nervous system. Possible mutagen.

#### UNITED STATES REGULATORY INFORMATION

SARA LISTED: Yes

DEMINIMIS: 1 %

NOTES: This product is subject to SARA section 313 reporting requirements. This product is subject to SARA section 313 reporting requirements.

#### CANADA REGULATORY INFORMATION

WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

DSL: No

NDSL: No

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#### Section 16 - Other Information

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#### DISCLAIMER

For R&D use only. Not for drug, household or other uses.

#### WARRANTY

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.  
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