

# SAFETY DATA SHEET

according to the OSHA  
Hazard Communication Standard

Version 7.2  
Revision Date 07/14/2026  
Print Date 07/15/2026

## SECTION 1. IDENTIFICATION

### 1.1 Product identifiers

Product name : Manganese(II) sulfate monohydrate

Product Number : 13245  
Brand : SIGALD  
Index-No. : 025-003-00-4  
CAS-No. : 10034-96-5

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

Identified uses : Laboratory chemicals, Synthesis of substances

Restrictions on use : The product is being supplied under the TSCA R&D Exemption (40 CFR Section 720.36). It is the recipient's responsibility to comply with the requirements of the R&D exemption. The product may not be used for a non-exempt commercial purpose under TSCA unless appropriate consent is granted in writing by MilliporeSigma.

### 1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich Inc.  
3050 SPRUCE ST  
ST. LOUIS MO 63103  
UNITED STATES

Telephone : +1 314 771-5765  
Fax : +1 800 325-5052

### 1.4 Emergency telephone number

Emergency Phone # : 800-424-9300 CHEMTREC (USA) +1-703-  
527-3887 CHEMTREC (International) 24  
Hours/day; 7 Days/week

## SECTION 2. HAZARDS IDENTIFICATION

**GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)**

**Hazards for the product as supplied**

SIGALD - 13245

Page 1 of 14

Serious eye damage : Category 1

Specific target organ toxicity - repeated exposure (Inhalation) : Category 2 (Brain)

Short-term (acute) aquatic hazard : Category 3

Long-term (chronic) aquatic hazard : Category 2

#### Other hazards

None known.

#### GHS label elements

Hazard pictograms : 

Signal word : Danger

Hazard statements : H318 Causes serious eye damage.  
H373 May cause damage to organs (Brain) through prolonged or repeated exposure if inhaled.  
H402 Harmful to aquatic life.  
H411 Toxic to aquatic life with long lasting effects.

Precautionary statements : **Prevention:**  
P260 Do not breathe dust.  
P273 Avoid release to the environment.  
P280 Wear eye protection/ face protection.

**Response:**  
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.  
P314 Get medical advice/ attention if you feel unwell.  
P391 Collect spillage.

**Disposal:**  
P501 Dispose of contents/ container to an approved waste disposal plant.

---

### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Substance

CAS-No. : 10034-96-5

SIGALD - 13245

Page 2 of 14

## Components

| Chemical name                 | CAS No./Unique ID | Concentration (% w/w) | Trade secret |
|-------------------------------|-------------------|-----------------------|--------------|
| Manganese Sulfate Monohydrate | 10034-96-5*       | >= 80 - <= 100        | TSC          |

\* Indicates that the identifier is a CAS No.

TSC- the actual concentration or concentration range is withheld as a trade secret

---

## SECTION 4. FIRST AID MEASURES

|                                                             |                                                                                                                                        |
|-------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| General advice                                              | : Show this safety data sheet to the doctor in attendance.                                                                             |
| If inhaled                                                  | : After inhalation: fresh air. Call in physician.                                                                                      |
| In case of skin contact                                     | : In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Consult a physician.         |
| In case of eye contact                                      | : After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist. Remove contact lenses.                       |
| If swallowed                                                | : After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.                                    |
| Most important symptoms and effects, both acute and delayed | : The most important known symptoms and effects are described in the labelling (see section 2 GHS label elements) and/or in section 11 |
| Protection of first-aiders                                  | : For personal protection see section 8.                                                                                               |
| Notes to physician                                          | : No data available                                                                                                                    |

---

## SECTION 5. FIREFIGHTING MEASURES

|                                       |                                                                            |
|---------------------------------------|----------------------------------------------------------------------------|
| Suitable extinguishing media          | : Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. |
| Specific hazards during fire fighting | : Not combustible.                                                         |

Ambient fire may liberate hazardous vapours.

|                                                |                                                                                                                                                                      |
|------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Hazardous combustion products                  | : Sulphur oxides<br><br>Manganese/manganese oxides                                                                                                                   |
| Specific extinguishing methods                 | : No data available                                                                                                                                                  |
| Further information                            | : Suppress (knock down) gases/vapours/mists with a water spray jet.<br>Prevent fire extinguishing water from contaminating surface water or the ground water system. |
| Special protective equipment for fire-fighters | : Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.      |

---

## SECTION 6. ACCIDENTAL RELEASE MEASURES

|                                                                     |                                                                                                                                                                                                                                                                                                                                 |
|---------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Personal precautions, protective equipment and emergency procedures | : Advice for non-emergency personnel:<br>Avoid inhalation of dusts.<br>Avoid substance contact.<br>Ensure adequate ventilation.<br>Evacuate the danger area, observe emergency procedures, consult an expert.<br>Advice for emergency responders:<br>Wear appropriate personal protective equipment, as indicated in Section 8. |
| Environmental precautions                                           | : Do not let product enter drains.                                                                                                                                                                                                                                                                                              |
| Methods and materials for containment and cleaning up               | : Cover drains. Collect, bind, and pump off spills.<br>Observe possible material restrictions (see sections 7 and 10).<br>Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.                                                                                                                  |

---

## SECTION 7. HANDLING AND STORAGE

For precautions see section 2 GHS label elements

Advice on safe handling : Work under hood. Do not inhale substance/mixture.

SIGALD - 13245

Page 4 of 14

|                                           |                                                      |
|-------------------------------------------|------------------------------------------------------|
| Further information on storage conditions | : Tightly closed.<br>Dry.                            |
| Storage class                             | : 13, Non Combustible Solids                         |
| Recommended storage temperature           | : Recommended storage temperature see product label. |
| Further information on storage stability  | : hygroscopic                                        |

---

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Ingredients with workplace control parameters

**Engineering measures** : No data available

### Personal protective equipment

**Respiratory protection** : For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator. For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges.  
Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

#### Hand protection

Material : Nitrile rubber  
Break through time : 480 min  
Glove thickness : 0.11 mm  
Protective index : Full contact  
Manufacturer : KCL 741 Dermatril® L

Material : Nitrile rubber  
Break through time : 480 min  
Glove thickness : 0.11 mm  
Protective index : Splash contact  
Manufacturer : KCL 741 Dermatril® L

**Remarks** : This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

|                          |                                                                                                                                                                   |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Eye protection           | : Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).<br>Tightly fitting safety goggles |
| Skin and body protection | : protective clothing                                                                                                                                             |
| Hygiene measures         | : Change contaminated clothing. Preventive skin protection recommended. Wash hands after working with substance.                                                  |

---

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

|                                                     |                                                      |
|-----------------------------------------------------|------------------------------------------------------|
| Appearance                                          | : solid                                              |
| Colour                                              | : pink                                               |
| Odour                                               | : odourless                                          |
| Odour Threshold                                     | : Not applicable                                     |
| pH                                                  | : 3.0 - 3.5 (68 °F / 20 °C)<br>Concentration: 50 g/l |
| Melting point/ range                                | : 840 °F / 449 °C<br>Method: OECD Test Guideline 102 |
|                                                     | : Not applicable                                     |
| Flash point                                         | : No data available                                  |
| Evaporation rate                                    | : No data available                                  |
| Flammability (solid, gas)                           | : The product is not flammable.                      |
| Flammability (liquids)                              | : No data available                                  |
| Burning rate                                        | : No data available                                  |
| Upper explosion limit /<br>Upper flammability limit | : Not applicable                                     |
| Lower explosion limit /<br>Lower flammability limit | : Not applicable                                     |
| Vapour pressure                                     | : No data available                                  |

|                                        |                                                                                                                           |
|----------------------------------------|---------------------------------------------------------------------------------------------------------------------------|
| Relative vapour density                | : No data available                                                                                                       |
| Relative density                       | : No data available                                                                                                       |
| Density                                | : 2.95 g/cm <sup>3</sup> (68 °F / 20 °C)                                                                                  |
| Solubility(ies)                        |                                                                                                                           |
| Water solubility                       | : 762 g/l (68 °F / 20 °C)                                                                                                 |
| Partition coefficient: n-octanol/water | : Not applicable for inorganic substances                                                                                 |
| Autoignition temperature               | : Not applicable                                                                                                          |
| Decomposition temperature              | : 752 - 842 °F / 400 - 450 °C<br>Elimination of water of crystallisation<br><br>1562 °F / 850 °C<br>(anhydrous substance) |
| Viscosity, dynamic                     | : No data available                                                                                                       |
| Viscosity, kinematic                   | : No data available                                                                                                       |
| Flow time                              | : No data available                                                                                                       |
| Explosive properties                   | : Not classified as explosive.                                                                                            |
| Oxidizing properties                   | : none                                                                                                                    |
| Molecular weight                       | : 169.02 g/mol                                                                                                            |
| Particle characteristics               |                                                                                                                           |
| Particle size                          | : No data available                                                                                                       |

---

## SECTION 10. STABILITY AND REACTIVITY

|                                    |                                                                                           |
|------------------------------------|-------------------------------------------------------------------------------------------|
| Reactivity                         | : No data available                                                                       |
| Chemical stability                 | : The product is chemically stable under standard ambient conditions (room temperature) . |
| Possibility of hazardous reactions | : Violent reactions possible with:<br>acids                                               |
| Conditions to avoid                | : Avoid moisture.<br><br>no information available                                         |
| Incompatible materials             | : No data available                                                                       |

SIGALD - 13245

Page 7 of 14

## **SECTION 11. TOXICOLOGICAL INFORMATION**

### **11.1 Information on toxicological effects**

#### **Acute toxicity**

LD50 Oral - Rat - male and female - 2,150 mg/kg

Remarks: (anhydrous substance)

(ECHA)

Symptoms: After uptake of large quantities: Nausea, Vomiting, Diarrhoea, gastric pain, Irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract.

LC50 Inhalation - Rat - male and female - 4 h - > 4.45 mg/l - dust/mist

(OECD Test Guideline 403)

Remarks: (anhydrous substance)

Symptoms: Possible damages: mucosal irritations, tissue damage, Pneumonia

Dermal: No data available

#### **Skin corrosion/irritation**

Skin - Rabbit

Result: No skin irritation - 4 h

(OECD Test Guideline 404)

Remarks: (anhydrous substance)

#### **Serious eye damage/eye irritation**

Eyes - Rabbit

Result: Irreversible effects on the eye

(OECD Test Guideline 405)

Remarks: (anhydrous substance)

#### **Respiratory or skin sensitization**

No data available

#### **Germ cell mutagenicity**

Test Type: Ames test

Result: negative

Remarks: (National Toxicology Program)

#### **Carcinogenicity**

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

#### **Reproductive toxicity**

No data available

#### **Specific target organ toxicity - single exposure**

No data available



**Specific target organ toxicity - repeated exposure**

Inhalation - May cause damage to organs through prolonged or repeated exposure.

- Brain

**Aspiration hazard**

No data available

**11.2 Additional Information**

RTECS: OP0893500

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., Prolonged or repeated inhalation may cause:, Pneumonia

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Manganese compounds are generally only very slightly absorbable via the gastrointestinal tract.

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

Stomach - Irregularities - Based on Human Evidence

Stomach - Irregularities - Based on Human Evidence

---

**SECTION 12. ECOLOGICAL INFORMATION****Ecotoxicity****Components:****Manganese Sulfate Monohydrate:**

Toxicity to algae/aquatic plants : NOEC (Desmodesmus subspicatus (green algae)): 1 mg/l

Exposure time: 72 h

Test Type: static test

Analytical monitoring: yes

Method: OECD Test Guideline 201

GLP: yes

ErC50 (Desmodesmus subspicatus (green algae)): 61 mg/l

Exposure time: 72 h

Test Type: static test

Analytical monitoring: yes

Method: OECD Test Guideline 201  
GLP: yes

Toxicity to microorganisms : NOEC (activated sludge): 560 mg/l  
Exposure time: 3 h  
Test Type: static test  
Method: OECD Test Guideline 209  
GLP: yes

EC50 (activated sludge): > 1,000 mg/l  
Exposure time: 3 h  
Test Type: static test  
Method: OECD Test Guideline 209  
GLP: yes

## **Persistence and degradability**

### **Components:**

#### **Manganese Sulfate Monohydrate:**

Biodegradability : Remarks: The methods for determining the biological degradability are not applicable to inorganic substances.

## **Bioaccumulative potential**

### **Components:**

#### **Manganese Sulfate Monohydrate:**

Partition coefficient: n-octanol/water : Remarks: Not applicable for inorganic substances

## **Mobility in soil**

No data available

## **Other adverse effects**

### **Product:**

Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances  
Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

### **Components:**

#### **Manganese Sulfate Monohydrate:**

Additional ecological information : Discharge into the environment must be avoided.

## Endocrine disrupting properties

No data available

---

## SECTION 13. DISPOSAL CONSIDERATIONS

### Disposal methods

Waste from residues : Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

---

## SECTION 14. TRANSPORT INFORMATION

### International Regulations

#### IATA-DGR

UN/ID No. : UN 3077  
Proper shipping name : Environmentally hazardous substance, solid, n.o.s. (Manganese Sulfate Monohydrate)  
Class : 9  
Packing group : III  
Labels : Class 9 - Miscellaneous dangerous substances and articles  
Packing instruction (cargo aircraft) : 956  
Packing instruction (passenger aircraft) : 956

#### IMDG-Code

UN number : UN 3077  
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Manganese Sulfate Monohydrate)  
Class : 9  
Packing group : III  
Labels : 9  
EmS Code : F-A, S-F  
Marine pollutant : yes

### Transport in bulk according to IMO instruments

Not applicable for product as supplied.

### National Regulations

#### 49 CFR

Not regulated as a dangerous good  
Poison Inhalation Hazard : No

### Special precautions for user

Remarks : EHS-Mark required (ADR 2.2.9.1.10, IMDG code 2.10.3) for single packagings and combination

SIGALD - 13245

Page 11 of 14

packagings containing inner packagings with  
Dangerous Goods > 5L for liquids or > 5kg for solids.  
Packages smaller than or equal to 5 kg / L , not  
dangerous goods of Class 9

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

---

## SECTION 15. REGULATORY INFORMATION

### CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

### SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

### SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

**SARA 311/312 Hazards** : Chronic Health Hazard

**SARA 313** : The following components are subject to reporting levels established by SARA Title III, Section 313:

|                               |            |                  |
|-------------------------------|------------|------------------|
| Manganese Sulfate Monohydrate | 10034-96-5 | >= 90 - <= 100 % |
|-------------------------------|------------|------------------|

### Clean Air Act

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B). The following chemical(s) are listed as HAP under the U.S. Clean Air Act, Section 112 (40 CFR 61):

|                               |            |                  |
|-------------------------------|------------|------------------|
| Manganese Sulfate Monohydrate | 10034-96-5 | >= 90 - <= 100 % |
|-------------------------------|------------|------------------|

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCM I Intermediate or Final VOC's (40 CFR 60.489).

### Clean Water Act

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

This product does not contain any priority pollutants related to the U.S. Clean Water Act

## **US State Regulations**

### **Massachusetts Right To Know**

No components are subject to the Massachusetts Right to Know Act.

### **Pennsylvania Right To Know**

Manganese Sulfate Monohydrate

10034-96-5

### **Maine Chemicals of High Concern**

Product does not contain any listed chemicals

### **Vermont Chemicals of High Concern**

Product does not contain any listed chemicals

### **Washington Chemicals of High Concern**

Product does not contain any listed chemicals

### **The components of this product are reported in the following inventories:**

US TSCA : All substances listed as active on the TSCA inventory

### **TSCA list**

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

---

## **SECTION 16. OTHER INFORMATION**

### **Full text of other abbreviations**

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonised System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organisation; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardisation; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand

SIGALD - 13245

Page 13 of 14

Inventory of Chemicals; OECD - Organisation for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

The information is believed to be correct but is not exhaustive and will be used solely as a guideline, which is based on current knowledge of the chemical substance or mixture and is applicable to appropriate safety precautions for the product. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See [www.sigma-aldrich.com](http://www.sigma-aldrich.com) and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

Copyright 2025 Sigma-Aldrich Co. LLC. License granted to make unlimited paper copies for internal use only.

Revision Date : 07/14/2026

US / EN