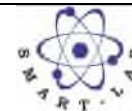


MATERIAL SAFETY DATA SHEET

According to regulation (EU) no.1907/2006

**MANGANESE (II) SULPHATE MONOHYDRATE**

Revision : 01

Date: August 10th, 2022

MSDS Number : 120

Section 1 - Chemical Product and Company Identification

- 1.1 Product Name** : **MANGANESE (II) SULPHATE MONOHYDRATE**
Synonyms : Manganous Sulphate
CAS No. : 10034-96-5
HS Code : 2833 29 40
Chemical Formula : MnSO₄. H₂O
Molecular Weight : 169.02 g/mol
Product Code : A-2925
Brand : SMART-LAB
- 1.2 Manufacturer** : **PT.Smart-Lab Indonesia**
Address : Ruko Boulevard Taman Tekno Blok E No. 9-11, BSD Serpong, Tangerang - Indonesia
Website : www.smartlabid.com
Email : sales@smartlabid.com
For information : Telp: +62 21- 7588 0205(Hunting), fax: +62-21-7588 0198
Emergency Telephone: +62-21-7588 0205(Hunting)
- 1.3 Application** : General Chemical reagent

Section 2 - Hazards Identification

2.1 Classification of the substance or mixture**Classification according to Regulation (EC) No 1272/2008**

Specific target organ toxicity - repeated exposure (Category 2), H373

Chronic aquatic toxicity (Category 2), H411

For the full text of the H-Statements mentioned in this Section, see Section 16

2.2 Label elements

Labelling according Regulation (EC) No 1272/2008

Pictogram



Signal word

warning

Hazard statement(s)

H373

May cause damage to organs through prolonged or repeated exposure.

H411

Toxic to aquatic life with long lasting effects.

Precautionary statement(s)

P260

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

P273

Avoid release to the environment.

P280

Wear eye protection/ face protection.

P305 + P351 + P338

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P314

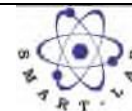
Get medical advice/ attention if you feel unwell.

P391

Collect spillage.

MATERIAL SAFETY DATA SHEET

According to regulation (EU) no.1907/2006

**MANGANESE (II) SULPHATE MONOHYDRATE**

Revision : 01

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Supplemental Hazard Statements none

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Section 3 - Composition, Information on Ingredients

3.1 Substances

Synonyms : Manganous Sulphate
 Formula : MnSO₄ · H₂O
 Molecular weight : 169.02 g/mol
 CAS-No. : 10034-96-5
 EC-No. : 232-089-9
 Index-No. : 025-003-00-4

3.2 Mixture**Hazardous ingredients according to Regulation (EC) No 1272/2008**

Component	Classification	Concentration
Manganese Sulfate Monohydrate CAS-No. 10034-96-5 EC-No. 232-089-9 Index-No. 025-003-00-4	STOT RE 2; Aquatic Chronic 2; H373, H411	<=100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

Section 4 - First Aid Measures

4.1 Description of first aid measures**General advice**

CoConsult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Flush eyes with water as a precaution.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

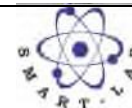
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

No data available

MATERIAL SAFETY DATA SHEET

According to regulation (EU) no.1907/2006

**MANGANESE (II) SULPHATE MONOHYDRATE**

Revision : 01

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Section 5 - Firefighting Measures

5.1 Extinguishing media**Suitable extinguishing media**

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide

5.2 Special hazards arising from the substance or mixture

Sulfur oxides, Manganese/manganese oxides, Not combustible. Ambient fire may liberate hazardous vapours.

5.3 Advice for firefighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

5.4 Further information

Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

Section 6 - Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid inhalation of dusts. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert. For personal protection see section 8.

6.2 Environmental precautions

Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

6.4 Reference to other sections

For disposal see section 13.

Section 7 - Handling and Storage

7.1 Precautions for safe handling**Advice on safe handling**

Work under hood. Do not inhale substance/mixture.

Hygiene measures

Change contaminated clothing. Preventive skin protection recommended. Wash hands after working with substance. For precautions see section 2.2

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

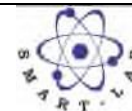
Tightly closed. Dry.

Storage stability

Recommended storage temperature 2 - 8 °C

MATERIAL SAFETY DATA SHEET

According to regulation (EU) no.1907/2006

**MANGANESE (II) SULPHATE MONOHYDRATE**

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Keep in a dry place.

Storage class

Storage class (TRGS 510): 13: Non Combustible Solids

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

Section 8 - Exposure Controls, Personal Protection

8.1 Control parameters**8.2 Exposure controls****Appropriat engineering controls**

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment**Eye/face protection**

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Tightly fitting safety goggles

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested:Dermatril® (KCL 740, Size M)

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested:Dermatril® (KCL 740, Size M)

Body Protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

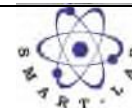
For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle r (US) or type ABEKP2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure

Do not let product enter drains.

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Section 9 - Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Appearance	Form: solid
	Colour: pink
Odour	odorless
Odour Threshold	No data available
pH	3,0 - 3,5 at 50 g/l at 20 °C
Melting point/freezingpoint	Melting point: > 449 °C - OECD Test Guideline 102
Initial boiling point and boiling range	Not applicable
Flash point	No data available
Evaporation rate	No data available
Flammability (solid, gas)	The product is not flammable.
Upper/lower flammability or explosive limits	No data available
Vapour pressure	No data available
Vapour density	No data available
Relative density	2,95 g/cm ³ at 20 °C
Water solubility	762 g/l at 20 °C
Partition coefficient: noctanol/water	No data available
Auto-ignition temperature	No data available
Decomposition temperature	400 - 450 °C - Elimination of water of crystallization 850 °C - (anhydrous substance)
Viscosity	No data available
Explosive properties	No data available
Oxidizing properties	none

9.2 Other safety information

No data available

Section 10 - Stability and Reactivity

10.1 Reactivity

No data available

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Violent reactions possible with: acids

10.4 Conditions to avoid

Avoid moisture.

10.5 Incompatible materials

No data available

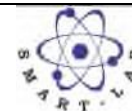
10.6 Hazardous decomposition products

In the event of fire: see section 5

Section 11 - Toxicological Information

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According to regulation (EU) no.1907/2006

**MANGANESE (II) SULPHATE MONOHYDRATE**

Revision : 01

Date: August 10th, 2022

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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, Diarrhea, 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 (OECD Test Guideline 403)

Remarks: (anhydrous substance)

Symptoms: Possible damages:, mucosal irritations, tissue damage, Pneumonia Dermal: No data available e

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 sensitisation

No data available(Manganese Sulfate Monohydrate)

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.

Reproductive toxicity

No data available(Manganese Sulfate Monohydrate)

Specific target organ toxicity - single exposure

No data available(Manganese Sulfate Monohydrate)

Specific target organ toxicity - repeated exposure

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

Aspiration hazard

No data available(Manganese Sulfate Monohydrate)

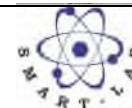
Additional Information

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

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Section 12 - Ecological Information

12.1 Toxicity

Toxicity to algae

static test NOEC - *Desmodesmus subspicatus* (green algae) - 1 mg/l - 72 h
(OECD Test Guideline 201)static test ErC50 - *Desmodesmus subspicatus* (green algae) - 61 mg/l - 72 h
(OECD Test Guideline 201)**12.2 Persistence and degradability**

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

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available (Manganese Sulfate Monohydrate)

12.5 Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Other adverse effects

Discharge into the environment must be avoided.

Section 13 - Disposal Considerations

13.1 Waste treatment methods**Product**

Offer surplus and non-recyclable solutions to a licensed disposal company. Dissolve or mix the material with a combustible solvent and burn in a chem scrubber.

Contaminated packaging

Dispose of as unused product.

Section 14 - Transport Information

14.1 UN number

ADR/RID: 3077

IMDG: 3077

IATA: 3077

14.2 UN proper shipping name

ADR/RID: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Manganese Sulfate Monohydrate)

IMDG: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Manganese Sulfate Monohydrate)

IATA: Environmentally hazardous substance, solid, n.o.s. (Manganese Sulfate Monohydrate)

14.3 Transport hazard class(es)

ADR/RID: 9

IMDG: 9

IATA: 9

14.4 Packaging group

ADR/RID: III

IMDG: III

IATA: III

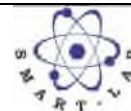
14.5 Environmental hazards

ADR/RID: yes

IMDG Marine pollutant: no

IATA: yes

MATERIAL SAFETY DATA SHEET		
According to regulation (EU) no.1907/2006		
MANGANESE (II) SULPHATE MONOHYDRATE		
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**14.6 Special precautions for user****Further information**

EHS-Mark required (ADR 2.2.9.1.10, IMDG code 2.10.3) for single packagings and combination packagings containing inner packagings with Dangerous Goods > 5L for liquids or > 5kg for solids.

Section 15 - Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

15.2 Chemical safety assessment

For this product a chemical safety assessment was not carried out

Section 16 - Additional Information

Full text of H-Statements referred to under sections 2 and 3.

H373 May cause damage to organs through prolonged or repeated exposure.
H411 Toxic to aquatic life with long lasting effects.

National Fire Protection Association (U.S.A.):

Health: 2

Flammability: 0

Reactivity: 0

Revision history :

Date	Rev	Description
Feb 11, 2019	00	-
August 10, 2022	01	thorough revision

Further information

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. PT. Smartlab Indonesia shall not be held liable for any damage resulting from handling or from contact with the above product.