

## Use of the substance/ preparation

Agribusiness | Other industrial uses

## Company name

Industrias emu s.a.s.



1.

## Product and company identification

**Synonyms:** Manganese Sulfate Monohydrate

**N° CAS:** 10034-96-5

**Molecular weight:** 169,01 g/mol

**Chemical formula:**  $\text{MnSO}_4 \cdot \text{H}_2\text{O}$

### Company name

Company: Industrias emu s.a.s.

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## Hazard identification

### Classification of the substance or mixture

Severe eye injuries, Category 1, H318

Organ-specific toxicity - repeated exposures, Category 2, inhalation, brain, H373

Chronic aquatic toxicity, Category 2, H411

### Label elements

#### Hazard pictograms



#### Word of warning

Danger

### Danger indications

H318 Causes severe eye damage.

H373 May cause organ (brain) damage after prolonged or repeated exposures if inhaled.

H411 Toxic to aquatic organisms, with lasting harmful effects.

### Precautionary statements

#### Preventing

P273 Avoid its release to the environment.

P280 Wear protective glasses.

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Version 044

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### Intervention

P305 + P351 + P338 IN CASE OF EYE CONTACT: rinse carefully with water for several minutes. Remove contact lenses if worn and easy. Keep clarifying.  
P314 Consult a doctor in case of discomfort.  
P391 Collect the spills.

### Other dangers

None known

## 3. Composition/ information on the components

### Substance

Chemical name	Manganese sulphate, monohydrated.
Chemical formula	MnSO <sub>4</sub> ·H <sub>2</sub> O
Concentration	31% Mn
N°. CAS	10034-96-5
N°. CE	232-089-9

## 4. First aid measures

### Description of the first aid

#### Inhalation of material can be harmful

After inhalation: fresh air. If the patient is unconscious, but breathing, lay him on his side. Take the doctor.

#### Contact can cause skin and eye burns

In case of skin contact: remove immediately all contaminated garments. Rinse skin with water/shower for at least 20 minutes.

After eye contact: Rinse with plenty of water. Consult the ophthalmologist.

After ingestion: drink water immediately (maximum 2 glasses). Do not induce vomiting. Consult with a doctor.

### Main symptoms and effects, acute and delayed

Irritating effects, conjunctivitis, stomach pains, diarrhea, vomiting, collapse and death. Risk of corneal turbidity.

### Indication of any medical care and special treatment to be provided immediately

Make sure medical personnel are aware of the materials involved and take precautions to protect yourself. Apply artificial respiration if the patient is not breathing.

Supply oxygen if breathing with difficulty.

Remove and isolate contaminated clothing and footwear.

In case of contact with the substance, rinse immediately with running water for at least 20 minutes.

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## 5. Fire measures

### Means of extinction

The substance is non-combustible. Select fire-fighting measures according to the surrounding conditions.

#### *Small fire:*

Dry chemical powder, CO<sub>2</sub>, water spray or regular foam.

#### *Big fire:*

Use water spray, fog or regular foam.

Do not disperse spilled material with high pressure water jets.

Move containers from the fire area if you can safely do so. Make a dam for the water that controls the fire, for its subsequent disposal.

### Specific hazards arising from the substance or mixture

Non-fuel: non-combustible substances do not ignite themselves, but can react by heating and produce toxic fumes.

Possibility of formation of dangerous vapors by fire in the environment.

Fire can cause fumes of: sulfur oxides.

### Recommendations for fire fighting personnel

#### *Special protective equipment for fire-fighting personnel.*

Use self-contained positive pressure air (SCBA) equipment.

The suit for professional firefighters will provide only limited protection. Stay in the risk area only with artificial respiration systems independent of the environment.

#### *Other information*

Repress gases/vapours/mists with powdered water. Prevent contamination of surface water or groundwater by water that has served to extinguish fires.

## 6.

## Accidental dumping measures

### Personal precautions

Do not touch or walk on spilled material.

Stop the spill, if you can do so safely and using the equipment

personal protection (see section 8).

Prevent the dust cloud.

### Small spill

With a clean shovel place the material in a clean and dry container and cover loosely; remove containers from the spill area.

### Big spill

Cordon off the area with a signaling tape.

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Cover the dust spill with a sheet of plastic or canvas to minimize its spread.  
Prevent entry into waterways, sewers, basements or confined areas.

### Reference to other sections

For details on waste treatment, see *Section 13*.

## 7. Handling and storage

### Precautions for safe handling

#### Hygiene measures

Replace the contaminated clothing. Wash hands after work.  
Food, beverages and other consumer items should not be consumed in work areas.

#### Safe storage conditions, including possible incompatibilities Storage conditions

Packaging must be clearly and permanently labelled.

Store in the original container as much as possible.

Keep the container tightly closed.

Keep the container in a well-ventilated place.

For possible incompatibilities refer to *section 10*.

## 8. Exposure and personal protection controls

### Control parameters

*Manganese Sulphate Monohydrate (10034-96-5)*

CO OEL

Time Weighted Average (TWA) 0,2 mg/m<sup>3</sup> Expressed as Mn

### Exposure controls

#### Ventilation system

A local and/or general exhaust aeration system is recommended to keep employee exposures below exposure limits. Local exhaust ventilation is generally preferred because emissions of the pollutant at its source can be controlled, preventing its dispersion in the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Best Practice Manual, Latest Edition*, for details.

#### Personal Respirators (NIOSH Approved)

If the exposure limit is exceeded 10 times higher than recommended or if the exposure concentration exceeds the use concentration specified by the appropriate regulatory agency or the respirator provider, Whichever is lower, use a particle respirator half dust/fog mask. A full dust/fog mask particulate respirator shall be used if 50 times above the exposure limit or maximum use concentration specified by the appropriate regulatory agency or the respirator provider, whichever is lower. For emergencies or cases where exposure levels are not known, use a full positive pressure mask, a self-contained respirator. WARNING: Self-contained respirators do not protect workers in oxygen-deficient atmospheres.

#### Protection for the eyes/face

Safety glasses adjusted to the contour of the face.

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## Skin protection

Submergence:

Material of the glove: nitrile rubber  
Thickness of the glove: 0,11 mm  
Time of penetration: >480 min

Splatter:

Material of the glove: nitrile rubber  
Thickness of the glove: 0,11 mm  
Time of penetration: >480 min

## Environmental exposure checks

Do not let the product enter the sewer system.

9.

## Physical and chemical properties

### Property information basic physical and chemical

Way	Solid.
Color	Pale pink.
Smell	Characteristic.
Olfactory threshold	No information is available.
pH	3.0 - 3.5 to 50 g/l 20°C
Melting point	>449 °C
Boiling point	Not applicable.
Flash point	It does not swell.
Evaporation rate	No information is available.
Flammability (solid, gas)	No information is available.
Lower explosion limit	Not applicable.
Upper explosion limit	Not applicable.
Vapour pressure	No information is available. No
Relative vapour density	information available. 2.95
Density	g/cm³ to 20 °C
Relative density	No information is available.
Water solubility	762 g/l a 20 °C soluble.
n-octanol/water partition coefficient	Not applicable for inorganic substances.
Self-ignition temperature	No information is available.
Temperature of decomposition	400-450°C Elimination of crystallization water
Explosive properties	850 °C (anhydrous substance). Not classified as explosive.

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Oxidising properties None.

### Other information

Ignition temperature Not applicable.  
Apparent density 300-1,200 kg/m3

## 10. Stability and Reactivity

**Stability and reactivity** See "Possibility of dangerous reactions".

### Chemical stability

Loses crystallization water: 400 - 450 °C  
Decomposition temperature: 850°C

### Possibility of dangerous reactions

Possible violent reactions with acids.

### Conditions to be avoided

Warming up.

### Incompatible materials

Information not available

### Dangerous decomposition products

In case of fire: see Section 5.

## 11. Toxicological Information on toxicological effects

### Toxicological information Watery oral toxicity

DL50 rata: 2.150 mg/kg

(anhydrous substance) (ECHA)

After ingestion of large amounts: nausea, vomiting, diarrhea, stomach pain, irritations of the mucous membranes in the mouth, throat, esophagus and stomach-intestinal tract.

### Acute toxicity by inhalation

CL50 rata: >4,45 mg/l; 4h; dust/fog  
OECD testing guidelines 403  
(Anhydrous substance)

Possible consequences: irritation of mucous membranes and injury of respiratory tissue.

Symptoms: tissue lesions, pneumonia.

### Acute skin toxicity

This information is not available

Skin irritation

Rabbit

Result: No skin irritation

OECD Test Guidelines 404

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(Anhydrous substance)

### Eye irritation

Rabbit

Result: irreversible effects on the eyes

OECD Test Guidelines 405

(Anhydrous substance)

It causes serious eye damage.

### Sensitization

This information is not available.

### Mutagenicity in germ cells

#### In vitro genotoxicity

Ames test

Result: negative.

(National Toxicology Program)

### Carcinogenicity

This information is not available.

### Reproductive toxicity

This information is not available.

### Teratogenicity

This information is not available.

*Specific toxicity to certain organs - single exposure* This information is not available.

### Specific toxicity to certain organs - repeated exposures

It can cause organ damage after prolonged or repeated exposures.

Route of exposure: inhalation.

Target organs: brain.

### Aspiration hazard

This information is not available.

## Other information

Manganese compounds are generally absorbed little through the intestinal tract.

Other information: handle with proper industrial hygiene precautions and respect safety practices.

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## 12. Ecological Information

### Toxicity

#### *Algae toxicity*

NOEC static test *Desmodemus subspicatus* (green algae): 1mg/l; 72 h

Analytical control: Yes

OECD TG 201

Static test CE50r *Desmodesmus subspicatus* (green algae): 61 mg/l; 72 h

Analytical control: Yes

OECD TG 201

#### *Toxicity to bacteria*

Static activated sludge NOEC test: 560 mg/l; 3h

OECD TG 209

Static test EC50 activated sludge: >1000 mg/l; 3h

OECD TG 209

### Persistence and degradability

#### *Biodegradability*

Methods for the determination of biological degradability are not applicable for inorganic substances.

### Bioaccumulation potential

*Partition coefficient n-octanol/water*

Not applicable for inorganic substances.

### Floor mobility

No information is available.

### Results of the PBT and MPMB assessment

A PBT and MPMB assessment was not made due to the fact that a chemical hazard assessment is not necessary or does not exist.

### Other adverse effects

#### *Complementary environmental information*

Discharge into the environment should be avoided.

## 13. Disposition considerations

According to Resolution 1407 of 2018, the final disposition of this packaging must be made with a hazardous waste manager.

Waste must be disposed of in accordance with local or national regulations. Leave the chemicals in their original containers. Do not mix them with other waste. Handle dirty containers as the product itself.



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## 14. Transport information

### Trucking

United Nations official transport designation	Solid substance dangerous to the environment (Manganese sulphate monohydrate)
N°UN/ID	3077
Danger class	9
Packing group	III
Packaging/packaging instructions Special packaging/packaging arrangements	P002, IBC08, LP02 * PP12, B3 *
Environmentally dangerous	Yes
Special precautions for users	Yes
*For further information please refer to the United Nations Orange Book section 4.1.4	

### Air transport (IATA)

United Nations official transport designation	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S (MANGANESE(II)-SULPHATE)
N° UN/ID	3077
Class	9
Packing group	III
Environmentally dangerous	Yes
Special precautions for the users	Not

### Maritime transport (IMDG)

Designation United Nations transport product	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S (MANGANESE(II)-SULPHATE)
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N° UN/ID	3077
Class	9
Packing group	III
Environmentally dangerous	Yes
Special precautions for the Users	Yes

### 15. Regulatory Information

National legislation

Storage class 10-13

International law

Substance not on the TSCA list

### 16. Other information

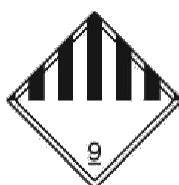
#### Advice relating to training

Workers must have sufficient information and practical training.

#### Transport labelling

Danger level 9

Special labelling



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