Magnesium Sulfate Heptahydrate

Safety Data Sheet

according to Regulation (EC) No. 453/2010


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

1.1. Product identifier

Product form: Substance
Substance name: Magnesium Sulfate Heptahydrate
EC-No.: 231-298-2
CAS-No.: 10034-99-8
Formula: MgSO₄ • 7H₂O

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

1.2.1. Relevant identified uses

Use of the substance/mixture: Nutrient; Dietary Supplement; Pharmaceuticals

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Manufacturer: Jost Chemical Co.
8150 Lackland Rd.
63114 Saint Louis, Missouri
T 314-428-4300 - F 314-428-4366
sds@jostchemical.com - www.jostchemical.com

Distributor: JOST CHEMICAL EUROPE SPRL
rue du Bois Portal n° 30/1-3
B - 5300 Andenne - BELGIQUE
T +32 85-552655 - F +32 85-552654
info@jostchemical.com

1.4. Emergency telephone number

Emergency number: For Hazardous Materials [or Dangerous Goods] Incident Spill, Leak, Fire, Exposure, or Accident
Call CHEMTREC Day or Night
United States and Canada: 1-800-424-9300 / +1 703-527-3887
Global: +1 703-741-5970

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]
Not classified
Adverse physicochemical, human health and environmental effects
No additional information available

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]
No labelling applicable

2.3. Other hazards

Other hazards not contributing to the classification: None, to our knowledge.
This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII
This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

SECTION 3: Composition/information on ingredients

3.1. Substances

Substance type: Mono-constituent

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Magnesium Sulfate Heptahydrate</td>
<td>(CAS-No.) 10034-99-8</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>(EC-No.) 231-298-2</td>
<td></td>
</tr>
</tbody>
</table>

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general: If you feel unwell, seek medical advice.
First-aid measures after inhalation: Remove person to fresh air and keep comfortable for breathing. Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.
First-aid measures after skin contact: Rinse with water. Soap may be used. Take victim to a doctor if irritation persists. Wash skin with plenty of water.
Magnesium Sulfate Heptahydrate  
Safety Data Sheet  
according to Regulation (EC) No. 453/2010

First-aid measures after eye contact: Rinse with water. Remove contact lenses, if present and easy to do. Continue rinsing. Take victim to an ophthalmologist if irritation persists. Rinse eyes with water as a precaution.

First-aid measures after ingestion: Rinse mouth with water. Immediately after ingestion: give lots of water to drink. Victim is fully conscious: immediately induce vomiting. Call Poison Information Centre (www.big.be/antigif.htm). Consult a doctor/medical service if you feel unwell. Call a poison center or a doctor if you feel unwell.

4.2. Most important symptoms and effects, both acute and delayed
Symptoms/effects after inhalation: AFTER INHALATION OF DUST: Coughing. Slight irritation.
Symptoms/effects after skin contact: No effects known.
Symptoms/effects after eye contact: Slight irritation.
Chronic symptoms: No effects known.

4.3. Indication of any immediate medical attention and special treatment needed
Treat symptomatically.

SECTION 5: Firefighting measures
5.1. Extinguishing media

5.2. Special hazards arising from the substance or mixture
Fire hazard: DIRECT FIRE HAZARD: Non combustible.
Explosion hazard: No data available.
Hazardous decomposition products in case of fire: On burning: release of toxic and corrosive gases/vapours (sulphur oxides).

5.3. Advice for firefighters
Precautionary measures fire: Exposure to fire/heat: keep upwind. Exposure to fire/heat: consider evacuation. Exposure to fire/heat: have neighbourhood close doors and windows.
Firefighting instructions: Dilute toxic gases with water spray.

SECTION 6: Accidental release measures
6.1. Personal precautions, protective equipment and emergency procedures
6.1.1. For non-emergency personnel
Emergency procedures: Ventilate spillage area. Mark the danger area. Prevent dust cloud formation, e.g. by wetting. No naked flames. Wash contaminated clothes.
Measures in case of dust release: In case of dust production: keep upwind. Dust production: have neighbourhood close doors and windows.

6.1.2. For emergency responders
Protective equipment: Do not attempt to take action without suitable protective equipment. For further information refer to section 8: “Exposure controls/personal protection”.

6.2. Environmental precautions
Avoid release to the environment.

6.3. Methods and material for containment and cleaning up
For containment: Contain released product, pump into suitable containers. Plug the leak, cut off the supply. Knock down/dilute dust cloud with water spray.
Methods for cleaning up: Mechanically recover the product. Prevent dust cloud formation. Scoop solid spill into closing containers. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling.
Other information: Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections
For further information refer to section 13.

SECTION 7: Handling and storage
7.1. Precautions for safe handling
Precautions for safe handling: Ensure good ventilation of the work station. Wear personal protective equipment. Avoid raising dust. Keep away from naked flames/heat. Carry operations in the open/under local exhaust/ventilation or with respiratory protection. Comply with the legal requirements.

Hygiene measures: Observe normal hygiene standards. Keep container tightly closed. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.
### 7.2. Conditions for safe storage, including any incompatibilities

#### Technical measures:
Take all necessary measures to avoid accidental discharge of products into drains and waterways due to the rupture of containers or transfer systems.

#### Storage conditions:
Store in a clean, dry warehouse in the original unopened containers. Store in a well-ventilated place. Keep cool.

#### Incompatible materials:

#### Heat and ignition sources:
KEEP SUBSTANCE AWAY FROM: heat sources.

#### Information on mixed storage:
KEEP SUBSTANCE AWAY FROM: oxidizing agents.

#### Storage area:
Limited time of storage. Meet the legal requirements. Keep out of direct sunlight.

#### Packaging materials:
SUITABLE MATERIAL: cardboard. synthetic material.

### 7.3. Specific end use(s)

No additional information available

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

<table>
<thead>
<tr>
<th>Magnesium Sulfate Heptahydrate (10034-99-8)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>DNEL/DMEL (Workers)</td>
<td>-</td>
</tr>
<tr>
<td>Long-term - systemic effects, dermal</td>
<td>21.3 mg/kg bw/day</td>
</tr>
<tr>
<td>Long-term - systemic effects, inhalation</td>
<td>37.6 mg/m³</td>
</tr>
<tr>
<td>DNEL/DMEL (General population)</td>
<td>-</td>
</tr>
<tr>
<td>Long-term - systemic effects, oral</td>
<td>12.8 mg/m³</td>
</tr>
<tr>
<td>Long-term - systemic effects, inhalation</td>
<td>11.1 mg/m³</td>
</tr>
<tr>
<td>Long-term - systemic effects, dermal</td>
<td>12.8 mg/m³</td>
</tr>
<tr>
<td>PNEC (Water)</td>
<td>-</td>
</tr>
<tr>
<td>PNEC aqua (freshwater)</td>
<td>0.68 mg/l</td>
</tr>
<tr>
<td>PNEC aqua (marine water)</td>
<td>0.068 mg/l</td>
</tr>
<tr>
<td>PNEC aqua (intermittent, freshwater)</td>
<td>6.8 mg/l</td>
</tr>
<tr>
<td>PNEC (STP)</td>
<td>-</td>
</tr>
<tr>
<td>PNEC sewage treatment plant</td>
<td>10 mg/l</td>
</tr>
</tbody>
</table>

#### 8.2. Exposure controls

**Appropriate engineering controls:**
Ensure good ventilation of the work station.

**Personal protective equipment:**

**Materials for protective clothing:**
GIVE GOOD RESISTANCE: butyl rubber. neoprene. PVC

**Hand protection:**
Gloves

**Eye protection:**
Safety glasses. In case of dust production: protective goggles. Safety glasses

**Skin and body protection:**
Protective clothing

**Respiratory protection:**
Dust production: dust mask with filter type P1
Magnesium Sulfate Heptahydrate

Safety Data Sheet
according to Regulation (EC) No. 453/2010

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Solid</td>
</tr>
<tr>
<td>Appearance</td>
<td>White granules.</td>
</tr>
<tr>
<td>Molecular mass</td>
<td>246.48 g/mol</td>
</tr>
<tr>
<td>Colour</td>
<td>Colourless to white.</td>
</tr>
<tr>
<td>Odour</td>
<td>Odourless.</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>6 - 7</td>
</tr>
<tr>
<td>Relative evaporation rate (butylacetate=1)</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point</td>
<td>1127 °C</td>
</tr>
<tr>
<td>Freezing point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Boiling point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flash point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>&gt; 150 °C</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not flammable, Non flammable</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>&lt; 0.13 hPa (20 °C)</td>
</tr>
<tr>
<td>Relative vapour density at 20 °C</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Relative density</td>
<td>1.7</td>
</tr>
<tr>
<td>Density</td>
<td>1670 kg/m³</td>
</tr>
<tr>
<td>Solubility</td>
<td>Soluble in water.</td>
</tr>
<tr>
<td></td>
<td>Water: 71 g/100ml</td>
</tr>
<tr>
<td></td>
<td>Ether: 1.2 g/100ml</td>
</tr>
<tr>
<td>Log Pow</td>
<td>Not applicable (inorganic substance)</td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, dynamic</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>Not explosive.</td>
</tr>
<tr>
<td>Oxidising properties</td>
<td>Not oxidising.</td>
</tr>
<tr>
<td>Explosive limits</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

9.2. Other information

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum ignition energy</td>
<td>Not applicable</td>
</tr>
<tr>
<td>VOC content</td>
<td>0 %</td>
</tr>
<tr>
<td>Other properties</td>
<td>Substance has neutral reaction.</td>
</tr>
</tbody>
</table>

SECTION 10: Stability and reactivity

10.1. Reactivity
The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability
Stable under normal conditions.

10.3. Possibility of hazardous reactions
None under normal conditions.

10.4. Conditions to avoid
None to our knowledge.

10.5. Incompatible materials

10.6. Hazardous decomposition products
Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Magnesium Sulfate Heptahydrate
Safety Data Sheet
according to Regulation (EC) No. 453/2010

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Not classified
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) : Not classified

Magnesium Sulfate Heptahydrate (10034-99-8)

LD50 oral rat > 4000 mg/kg (Rat)
LD50 dermal rat > 2000 mg/kg (OECD 402: Acute Dermal Toxicity, 24 h, Rat, Male/female, Experimental value)

Causes serious eye damage. : Not classified (Based on available data, the classification criteria are not met)
Serious eye damage/irritation : Not classified (Based on available data, the classification criteria are not met)
Ph: 6 - 7
Respiratory or skin sensitisation : Not classified (Based on available data, the classification criteria are not met)
Additional information : (OECD 429 method)
(Germ cell mutagenicity)
Additional information : (OECD 476 method)
(results obtained on : magnesium sulfate dried)
(OECD 471 method)
(OECD 473 method)
(results obtained by read-across)
(Published data)
Carcinogenicity : Not classified (Lack of data)
Reproductive toxicity : Not classified (Based on available data, the classification criteria are not met)
Additional information : NOAEL (oral,rat) : ≥ 1500 mg/kg/d
(OECD 422 method)
(results obtained by read-across)
(Published data)
STOT-single exposure : Not classified (Lack of data)
STOT-repeated exposure : Not classified (Based on available data, the classification criteria are not met)

Magnesium Sulfate Heptahydrate (10034-99-8)

NOAEL (subacute, oral, animal/male, 28 days) >= 1500 mg/kg bodyweight (OECD 422 method) (results obtained by read-across)
(Published data)
NOAEL (subacute, oral, animal/female, 28 days) >= 1500 mg/kg bodyweight (OECD 422 method) (results obtained by read-across)
(Published data)
Aspiration hazard : Not classified (Not applicable)
Potential adverse human health effects and symptoms : Practically non-toxic if swallowed (LD50 oral, rat > 2000 mg/kg). Slightly harmful in contact with skin. Slightly irritant to respiratory organs. Slightly irritant to eyes.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Not classified as dangerous for the environment according to the criteria of Regulation (EC) No 1272/2008.
Ecology - air : Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009).
Dangerous for the environment : Not classified
Chronic aquatic toxicity : Not classified

Magnesium Sulfate Heptahydrate (10034-99-8)

LC50 fish 1 15500 mg/l (96 h, Gambusia affinis)
EC50 Daphnia 1 1700 mg/l (24 h, Daphnia magna)
EC50 72h algae (1) 2700 mg/l (Scenedesmus subspicatus)
ErC50 (algae) 2700 mg/l Chlorella vulgaris, 18 days (results obtained by read-across) (Published data)

12.2. Persistence and degradability

Magnesium Sulfate Heptahydrate (10034-99-8)

Persistence and degradability Biodegradability: not applicable.
Magnesium Sulfate Heptahydrate
Safety Data Sheet
according to Regulation (EC) No. 453/2010

Biochemical oxygen demand (BOD) | Not applicable
Chemical oxygen demand (COD) | Not applicable
ThOD | Not applicable
BOD (% of ThOD) | Not applicable

12.3. Bioaccumulative potential
Magnesium Sulfate Heptahydrate (10034-99-8)
Log Pow | Not applicable (inorganic substance)
Bioaccumulative potential | No bioaccumulation data available.

12.4. Mobility in soil
No additional information available

12.5. Results of PBT and vPvB assessment
Magnesium Sulfate Heptahydrate (10034-99-8)
This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII
This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

12.6. Other adverse effects
No additional information available

SECTION 13: Disposal considerations
13.1. Waste treatment methods
Regional legislation (waste) : LWCA (the Netherlands): KGA category 05.
Waste treatment methods : Dispose of contents/container in accordance with licensed collector’s sorting instructions.
Product/Packaging disposal recommendations : Remove to an authorized dump (Class I). Precipitate/make insoluble. Obtain the consent of pollution control authorities before discharging to wastewater treatment plants.

SECTION 14: Transport information
In accordance with ADR / IMDG / IATA
14.1. UN number
UN-No. (ADR) : Not applicable
UN-No. (IMDG) : Not applicable
UN-No. (IATA) : Not applicable

14.2. UN proper shipping name
Proper Shipping Name (ADR) : Not regulated for transport
Proper Shipping Name (IMDG) : Not regulated for transport
Proper Shipping Name (IATA) : Not regulated for transport

14.3. Transport hazard class(es)
ADR
Transport hazard class(es) (ADR) : Not applicable

IMDG
Transport hazard class(es) (IMDG) : Not applicable

IATA
Transport hazard class(es) (IATA) : Not applicable

14.4. Packing group
Packing group (ADR) : Not applicable
Packing group (IMDG) : Not applicable
Packing group (IATA) : Not applicable

14.5. Environmental hazards
Dangerous for the environment : No
Marine pollutant : No
Other information : No supplementary information available

14.6. Special precautions for user
Overland transport
Transport regulations (ADR) : Not subject

Transport by sea
Transport regulations (IMDG) : Not subject
Magnesium Sulfate Heptahydrate
Safety Data Sheet
according to Regulation (EC) No. 453/2010

Air transport
Transport regulations (IATA) : Not subject

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code
Not applicable

SECTION 15: Regulatory information
15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU-Regulations
No REACH Annex XVII restrictions
Magnesium Sulfate Heptahydrate is not on the REACH Candidate List
Magnesium Sulfate Heptahydrate is not on the REACH Annex XIV List

VOC content : 0 %
Directive 2012/18/EU (SEVESO III)

15.1.2. National regulations
Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on the Canadian DSL (Domestic Substances List)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on INSQ (Mexican National Inventory of Chemical Substances)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
The anhydrous form of this material is listed on the United States TSCA (Toxic Substance Control Act) inventory

15.2. Chemical safety assessment
No chemical safety assessment has been carried out

SECTION 16: Other information

Indication of changes:
This sheet was updated (refer to the date at the top of this page).

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product