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

1.1. Product identifier

Product form: Substance
Substance name: Magnesium Sulfate Dried
EC-No.: 231-298-2
CAS-No.: 7487-88-9
Type of product: Pure substance, hygroscopic substance. Preventive measures apply to the substance in dry state only
Formula: MgSO₄·xH₂O
Synonyms: epsom salts / magnesium sulfate (1:1) / magnesium sulfate, anhydrous, crystalline / magnesium sulfate, dried, pure / magnesium sulphate / magnesiumsulfate, anhydrous / magnesiumsulfate, dried / PST13510 / sal angalis / sal de sedlitz / sulfuric acid magnesium salt / sulfuric acid magnesium salt (1:1)
Product group: Product
BIG no: 10637

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: Pharmaceuticals

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

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

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

1.4. Emergency telephone number

<table>
<thead>
<tr>
<th>Country</th>
<th>Organisation/Company</th>
<th>Address</th>
<th>Emergency number</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>United Kingdom</td>
<td>National Poisons Information Service (Birmingham Centre)</td>
<td>Dudley Road B18 7QH-Birmingham</td>
<td>0344 892 0111</td>
<td></td>
</tr>
</tbody>
</table>

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

To our knowledge, this product does not present any particular risk, provided it is handled in accordance with good occupational hygiene and safety practice. Presents no particular risk to the environment, provided the disposal requirements (see section 13) and national or local regulations are complied with. Not classified as flammable according to EC criteria, but may present a risk in the event of a fire. According to EC criteria, this product is not classified as a hazardous substance.

2.2. Label elements

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

Signal word (CLP): None
Hazard statements (CLP): None
Precautionary statements (CLP): None

2.3. Other hazards

Other hazards not contributing to the classification: None, to our knowledge.

PBT: not yet assessed
vPvB: not yet assessed
Magnesium Sulfate Dried
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according to Regulation (EC) No. 453/2010

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 Dried</td>
<td>(CAS-No.) 7487-88-9 (EC-No.) 231-298-2</td>
<td>100</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 the victim into fresh air.
First-aid measures after skin contact: Rinse with water. Do not apply neutralizing agents. Take victim to an ophthalmologist if irritation persists.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects after inhalation: Coughing. Slight irritation.
Symptoms/effects after skin contact: No data available.
Symptoms/effects after eye contact: Slight irritation.

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media: Adapt extinguishing media to the environment.
Unsuitable extinguishing media: No unsuitable extinguishing media known.

5.2. Special hazards arising from the substance or mixture

Fire hazard: Non combustible.
Explosion hazard: Not applicable.
Hazardous decomposition products in case of fire: Toxic fumes may be released. Magnesium oxide. 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: 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. Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection". For further information refer to section 8: "Exposure controls/personal protection".
6.2. Environmental precautions
Avoid release to the environment. Do not allow product to spread into the environment.

6.3. Methods and material for containment and cleaning up
For containment: Contain released product, pump into suitable containers. Consult "Material-handling" to select material of containers. Plug the leak, cut off the supply. Knock down/dilute dust cloud with water spray.

Methods for cleaning up: Prevent dust cloud formation. Scoop solid spill into closing containers. See "Material-handling" for suitable container materials. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling.

Other information: Dispose of in accordance with relevant local regulations. Dispose of materials or solid residues at an authorized site.

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

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Precautions for safe handling: Comply with the legal requirements. Thoroughly clean/dry the installation before use. Avoid raising dust. Keep away from naked flames/heat. Observe normal hygiene standards. Keep container tightly closed. Carry operations in the open/under local exhaust/ventilation or with respiratory protection.

Hygiene measures: Do not eat, drink or smoke when using this product. Always wash hands after handling the 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: Keep container tightly closed and dry. Store in a cool, well-ventilated place. Protect from light. Store in a well-ventilated place. Keep cool.


Heat and ignition sources: heat sources.

Information on mixed storage: oxidizing agents. water/moisture.

Packaging materials: SUITABLE MATERIAL: 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 Dried (7487-88-9)</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 bodyweight/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/kg bodyweight/day</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/kg bodyweight/day</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. Extraction to remove dust at its source. Ensure good ventilation of the work station.

Personal protective equipment:
Materials for protective clothing:
Wear suitable protective clothing, gloves and eye/face protection

Hand protection:
Impermeable protective gloves

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

Skin and body protection:
Protective clothing

Respiratory protection:
Dust production: dust mask with filter type P1

Environmental exposure controls:
Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state: Solid
Molecular mass: 120.36 g/mol
Colour: Colourless-white.
Odour: Odourless.
Odour threshold: No data available
pH: 7 (5 %)
Relative evaporation rate (butylacetate=1): No data available
Melting point: 1124 °C
Freezing point: Not applicable
Boiling point: Not applicable
Flash point: Not applicable
Auto-ignition temperature: Not applicable
Decomposition temperature: 1124 °C
Flammability (solid, gas): Non flammable
Vapour pressure: Not applicable
Relative vapour density at 20 °C: No data available
Relative density: 2.7
Density: 2660 kg/m³
Solubility: Soluble in water. Soluble in glycerol.
Ether: 1.2 g/100ml
Log Pow: Not applicable (inorganic substance)
Viscosity, kinematic: Not applicable
Viscosity, dynamic: No data available
Explosive properties: Not explosive.
Oxidising properties: Non oxidizing material according to EC criteria.
Explosive limits: Not applicable

9.2. Other information

Minimum ignition energy: Not applicable
VOC content: 0 %
Other properties: Hygroscopic. Substance has neutral reaction.
SECTION 10: Stability and reactivity

10.1. Reactivity
On burning: release of toxic and corrosive gases/vapours (sulphur oxides).

10.2. Chemical stability
Hygroscopic.

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
No additional information available

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Not classified (Based on available data, the classification criteria are not met)
Acute toxicity (dermal) : Not classified (Based on available data, the classification criteria are not met)
Acute toxicity (inhalation) : Not classified (Based on available data, the classification criteria are not met)

<table>
<thead>
<tr>
<th>Magnesium Sulfate Dried (7487-88-9)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>&gt; 4000 mg/kg (Rat)</td>
</tr>
<tr>
<td>LD50 dermal rat</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>&gt; 2000 mg/kg (Rat)</td>
</tr>
</tbody>
</table>

Causes serious eye damage.
Serious eye damage/irritation : Not classified (Based on available data, the classification criteria are not met)
Respiratory or skin sensitisation : Not classified (Based on available data, the classification criteria are not met)
Additional information : (OECD 429 method)
Published data

Germ cell mutagenicity : Not classified (Based on available data, the classification criteria are not met)
Additional information : (OECD 476 method)
(results obtained on : magnesium sulfate dried)
OECD 743 method
OECD 471 method
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)

<table>
<thead>
<tr>
<th>Magnesium Sulfate Dried (7487-88-9)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOAEL (subacute, oral, animal/male, 28 days)</td>
</tr>
<tr>
<td>≥ 1500 mg/kg bodyweight (OECD 422 method) (results obtained by read-across) (Published data)</td>
</tr>
<tr>
<td>NOAEL (subacute, oral, animal/female, 28 days)</td>
</tr>
<tr>
<td>≥ 1500 mg/kg bodyweight (OECD 422 method) (results obtained by read-across) (Published data)</td>
</tr>
</tbody>
</table>

Aspiration hazard : Not classified (Not applicable)

SECTION 12: Ecological information

12.1. Toxicity
Ecology - general : Presents no particular risk to the environment, provided the disposal requirements (see section 13) and national or local regulations are complied with.
Ecology - air : Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009).
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Dangerous for the environment: Not classified
Chronic aquatic toxicity: Not classified

### Magnesium Sulfate Dried (7487-88-9)

<table>
<thead>
<tr>
<th>Component</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50 fish 2</td>
<td>15500 mg/l (LC50; 96 h; Gambusia affinis)</td>
</tr>
<tr>
<td>EC50 Daphnia 1</td>
<td>1700 mg/l (EC50; 24 h)</td>
</tr>
<tr>
<td>ErC50 (algae)</td>
<td>2700 mg/l Chlorella vulgaris, 18 days</td>
</tr>
</tbody>
</table>

#### 12.2. Persistence and degradability

### Magnesium Sulfate Dried (7487-88-9)

| Persistence and degradability | Not applicable. |
| Biochemical oxygen demand (BOD) | Not applicable |
| Chemical oxygen demand (COD)    | Not applicable |
| ThOD                            | Not applicable |

#### 12.3. Bioaccumulative potential

### Magnesium Sulfate Dried (7487-88-9)

<table>
<thead>
<tr>
<th>Component</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log Pow</td>
<td>Not applicable (inorganic substance)</td>
</tr>
<tr>
<td>Bioaccumulative potential</td>
<td>No bioaccumulation data available.</td>
</tr>
</tbody>
</table>

#### 12.4. Mobility in soil

No additional information available

#### 12.5. Results of PBT and vPvB assessment

<table>
<thead>
<tr>
<th>Component</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Magnesium Sulfate Dried (7487-88-9)</td>
<td>PBT: not yet assessed</td>
</tr>
<tr>
<td></td>
<td>vPvB: not yet assessed</td>
</tr>
</tbody>
</table>

#### 12.6. Other adverse effects

No additional information available

### SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods

Product/Packaging disposal recommendations: Precipitate/make insoluble. Remove to an authorized dump (Class I). Obtain the consent of pollution control authorities before discharging to wastewater treatment plants.

Additional information: LWCA (the Netherlands): KGA category 05. Can be considered as non hazardous waste according to Directive 2008/88/EC.

European List of Waste (LoW) code: 06 03 14 - solid salts and solutions other than those mentioned in 06 03 11 and 06 03 13

### SECTION 14: Transport information

In accordance with ADR / IMDG / IATA

#### 14.1. UN number

<table>
<thead>
<tr>
<th>Component</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN-No. (ADR)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>UN-No. (IMDG)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>UN-No. (IATA)</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

#### 14.2. UN proper shipping name

<table>
<thead>
<tr>
<th>Component</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proper Shipping Name (ADR)</td>
<td>Not regulated for transport</td>
</tr>
<tr>
<td>Proper Shipping Name (IMDG)</td>
<td>Not regulated for transport</td>
</tr>
<tr>
<td>Proper Shipping Name (IATA)</td>
<td>Not regulated for transport</td>
</tr>
</tbody>
</table>

#### 14.3. Transport hazard class(es)

<table>
<thead>
<tr>
<th>Component</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADR</td>
<td>Transport hazard class(es) (ADR) Not applicable</td>
</tr>
<tr>
<td>IMDG</td>
<td>Transport hazard class(es) (IMDG) Not applicable</td>
</tr>
</tbody>
</table>

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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

- 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 Dried is not on the REACH Candidate List
Magnesium Sulfate Dried is not on the REACH Annex XIV List

VOC content : 0 %

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 the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
Not listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Not listed on the Korean ECL (Existing Chemicals List)
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)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

Germany
VwVwS Annex reference : Water hazard class (WGK) 1, low hazard to waters (Classification according to VwVwS, Annex 1 or 2; ID No. 366)
WGK remark : Classification water polluting in compliance with Verwaltungsvorschrift wassergefährdender Stoffe (VwVwS) of 27 July 2005 (Anhang 2)

Netherlands
SZW-lijst van kankerverwekkende stoffen : The substance is not listed
SZW-lijst van mutagene stoffen : The substance is not listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding : The substance is not listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid : The substance is not listed

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NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling

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).

SDS EU (REACH Annex II)
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.