

# Magnesium Sulphate

Safety data sheet in the 16-section GHS format · CAS 10034-99-8

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## 1. Identification of the substance and of the supplier

|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product name      | Magnesium Sulphate                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Synonyms          | magnesium sulphate heptahydrate, Epsom salt, MgSO <sub>4</sub> , mag sulphate                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| C.A.S. number     | 10034-99-8 (magnesium sulphate HEPTAHYDRATE, Epsom salt). Anhydrous magnesium sulphate is CAS 7487-88-9 and the monohydrate (kieserite) is CAS 14168-73-1. EC number 231-298-2 covers magnesium sulphate.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Molecular formula | MgSO <sub>4</sub> ·7H <sub>2</sub> O                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Grade supplied    | Heptahydrate, Epsom                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Product group     | Industrial Salts & Inorganics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Identified uses   | Fertiliser blending, Animal feed, Textiles, Industrial, Water treatment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Supplier          | Velora Chemicals Private Limited                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Emergency contact | Medical, fire or spill emergency — call the emergency services first: 112 (all-India), 101 fire, 108 ambulance. Velora Chemicals Private Limited does not at present operate a 24-hour chemical emergency advice line, and this sheet does not pretend otherwise. Every consignment despatched by road carries an emergency information panel under rule 134 of the Central Motor Vehicles Rules 1989 bearing a number from which expert advice on this material can be obtained, and the producer's safety data sheet issued with the consignment carries the producer's own 24-hour number where one is operated. For product, grade and documentation queries in business hours: +91 99255 22674. |

## 2. Hazards identification

|                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| GHS signal word       | Not classified                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Hazard classification | Not classified. There is no harmonised CLP Annex VI entry for magnesium sulphate, and producer SDSs state that it is 'not a hazardous substance or mixture' / 'not considered hazardous'. ILO ICSC 1197 records no GHS classification. Some sheets add a precautionary narrative about mechanical dust or eye irritation; that is good practice, not a classification, and it must not be turned into an H-statement or a signal word on the label. |

## 3. Composition / information on ingredients

|                  |                                                                                                                                                                                                           |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Substance        | Magnesium Sulphate                                                                                                                                                                                        |
| C.A.S. number    | 10034-99-8 (magnesium sulphate HEPTAHYDRATE, Epsom salt). Anhydrous magnesium sulphate is CAS 7487-88-9 and the monohydrate (kieserite) is CAS 14168-73-1. EC number 231-298-2 covers magnesium sulphate. |
| Molecular weight | 246.47 (producer data; 246.48 on a second sheet). Anhydrous MgSO <sub>4</sub> is 120.4.                                                                                                                   |
| Composition      | Heptahydrate, Epsom                                                                                                                                                                                       |

## 4. First-aid measures

|                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Eye contact</b>  | Rinse with plenty of water for at least 15 minutes, holding the eyelids apart and lifting the upper and lower lids so the whole surface is irrigated; remove contact lenses if easily possible. Refer for medical attention if irritation persists. The effect of the crystals is mechanical abrasion rather than chemical injury.                                                                                                                                                                                                   |
| <b>Skin contact</b> | Remove contaminated clothing and rinse the skin with plenty of water or shower, then wash with soap and water. Medical attention is not normally required; magnesium sulphate is used therapeutically on skin.                                                                                                                                                                                                                                                                                                                       |
| <b>Inhalation</b>   | Move the casualty to fresh air and keep them at rest. Rinse the mouth and nose with water. Refer for medical attention if coughing or throat irritation persists.                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Ingestion</b>    | Rinse the mouth and give one or two glasses of water to drink. Do NOT induce vomiting. Magnesium sulphate is a saline (osmotic) laxative, so swallowing a significant quantity causes cramping, diarrhoea and fluid loss. Refer for medical attention if a large amount has been swallowed, and seek medical advice urgently for a child or for anyone with impaired kidney function, in whom retained magnesium can cause nausea, flushing, weakness, low blood pressure and, at high levels, depressed breathing and heart rhythm. |

## 5. Fire-fighting measures

|                                                   |                                                                                                                                                                                                                                                                             |
|---------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Flash point</b>                                | Not flammable                                                                                                                                                                                                                                                               |
| <b>Suitable extinguishing media</b>               | Water fog, foam, dry chemical powder or carbon dioxide, chosen to suit the surrounding fire. The substance itself does not contribute fuel.                                                                                                                                 |
| <b>Unsuitable extinguishing media</b>             | Do not use a high-pressure water jet: it will spread the material and the fire.                                                                                                                                                                                             |
| <b>Special hazards arising from the substance</b> | Hazardous gases and decomposition products may be formed in a fire, from this substance or from its packaging and the materials stored with it. Packaging and pallets are themselves a substantial fire load. That is true even though the contents do not contribute fuel. |
| <b>Advice for fire-fighters</b>                   | Fire-fighters must wear self-contained breathing apparatus and full protective clothing. Keep unnecessary personnel away and upwind. Prevent firefighting run-off from entering drains, surface water or groundwater.                                                       |

## 6. Accidental release measures

Keep unnecessary personnel away and upwind, and ventilate. Wear the protective equipment in section 8, including respiratory protection, before approaching. Eliminate ignition sources and prohibit smoking before approaching. Avoid raising dust, and never blow a spilled powder down with compressed air. Dry-collect — vacuum with a HEPA-filtered unit, or sweep gently without raising dust — into labelled, closable containers for disposal under section 13. A spill inside a vessel, tank, silo, container or pit is a confined-space job: test the atmosphere and work under permit. A fine powder makes a floor slippery, especially once wet, so treat every wetted surface as slippery until it has been washed and dried. Prevent entry to drains, surface water and groundwater. Do not return spilled material to the original container; a damaged bag should be overpacked into a labelled outer rather than decanted into an unmarked one.

## 7. Handling and storage

- Store bags sealed and off the floor. The heptahydrate loses water slowly in dry heat and takes up moisture in humidity, so badly stored stock drifts off its nominal magnesium content in either direction — up as it effloresces, down as it damps.
- Not classified as dangerous goods. The dust is a mild irritant — use a mask when emptying bags.
- Solutions run close to neutral — typically pH 6 to 8 — but the dissolved sulphate still attacks mild steel over time, so use plastic, FRP or stainless equipment for make-up and dosing.

**Storage:** Store in tightly closed bags or containers in a cool, dry, well-ventilated place away from direct sunlight, heat and strong oxidisers. The heptahydrate is hygroscopic and cakes if it takes up moisture from a humid store, and it also loses water of crystallisation in a hot, dry store - a moderate, stable temperature and intact packaging preserve both the assay and the free-flowing condition. Keep bags off damp floors and do not stack where condensation can run onto them. Keep away

from foodstuffs unless the grade and store are food-approved.

## 8. Exposure controls / personal protection

Engineering controls. Enclose every transfer, tipping, bag-slitting and sampling point and fit local exhaust extraction at each, and keep airborne concentrations below the limit in force at the place of use. Provide an eyewash within reach of the working position, and a safety shower wherever the material is classified corrosive or irritant or is handled in quantity. Do not eat, drink or smoke in the handling area; wash before breaks. Where no limit is stated above, occupational exposure limits vary by jurisdiction: check the limit in force at the place of use and the producer's sheet for the grade supplied, and record which value your assessment adopted. Select eye, skin and respiratory protection on the strength of a measured or modelled exposure assessment, not on this sheet alone.

## 9. Physical and chemical properties

|                                              |                                                                                                                                                                                                                                             |
|----------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Appearance</b>                            | Colourless to white, odourless crystals, granules or crystalline powder with a bitter saline taste                                                                                                                                          |
| <b>Physical state</b>                        | Solid                                                                                                                                                                                                                                       |
| <b>Melting / freezing point</b>              | About 48 C (producer data 48.1 C) - the crystals dissolve in their own water of crystallisation rather than melting cleanly, and progressively dehydrate on further heating. The anhydrous salt decomposes at about 1124 C (ILO ICSC 1197). |
| <b>Boiling point</b>                         | Not applicable                                                                                                                                                                                                                              |
| <b>Relative density</b>                      | About 1.7 g/cm <sup>3</sup> (heptahydrate, producer data). Anhydrous MgSO <sub>4</sub> is 2.66 g/cm <sup>3</sup> (ILO ICSC 1197) - do not quote the anhydrous figure for Epsom salt.                                                        |
| <b>Solubility in water</b>                   | Freely soluble - 34 g/100 mL at 20 C (producer data); ILO ICSC 1197 gives 30 g/100 mL at 20 C for the anhydrous salt. Solubility rises sharply with temperature.                                                                            |
| <b>pH</b>                                    | Essentially neutral. Producer data: pH 7 in a 35% w/w solution at 20 C; other producer sheets specify a range of 5.0-9.0 in a 5% solution. State the concentration alongside the figure.                                                    |
| <b>Flash point</b>                           | Not flammable                                                                                                                                                                                                                               |
| <b>Auto-ignition / ignition temperature</b>  | Not available                                                                                                                                                                                                                               |
| <b>Explosive / dust-explosion properties</b> | Not available                                                                                                                                                                                                                               |
| <b>Vapour pressure</b>                       | Not available                                                                                                                                                                                                                               |
| <b>Vapour density</b>                        | Not available                                                                                                                                                                                                                               |
| <b>Partition coefficient (log Pow)</b>       | Not available                                                                                                                                                                                                                               |
| <b>Particle characteristics</b>              | Not available                                                                                                                                                                                                                               |
| <b>Molecular weight</b>                      | 246.47 (producer data; 246.48 on a second sheet). Anhydrous MgSO <sub>4</sub> is 120.4.                                                                                                                                                     |

## 10. Stability and reactivity

|                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
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| <b>Incompatible materials</b> | Strong oxidising agents. Ethoxyethyl alcohols. On heating to decomposition it evolves toxic and corrosive sulfur oxides (ILO ICSC 1197). In solution it forms precipitates with soluble carbonates, phosphates, arsenates and tartrates and with soluble barium, strontium, calcium and lead salts - a formulation and scaling consideration rather than a safety hazard. It is strongly hygroscopic: moisture causes caking and lump formation. |
|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Conditions to avoid</b> | Store in tightly closed bags or containers in a cool, dry, well-ventilated place away from direct sunlight, heat and strong oxidisers. The heptahydrate is hygroscopic and cakes if it takes up moisture from a humid store, and it also loses water of crystallisation in a hot, dry store - a moderate, stable temperature and intact packaging preserve both the assay and the free-flowing condition. Keep bags off damp floors and do not stack where condensation can run onto them. Keep away from foodstuffs unless the grade and store are food-approved. |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## 11. Toxicological information

The health hazards classified for this substance are listed in section 2, and the corresponding first-aid measures in section 4. Numerical toxicological endpoints are not reproduced here: refer to the producer's safety data sheet for the grade supplied, and to the ECHA and PubChem entries for the substance.

## 12. Ecological information

Where section 2 or section 14 classifies this substance as hazardous to the aquatic environment, prevent any release to drains, surface water or groundwater and treat aqueous effluent before discharge. Otherwise, refer to the producer's sheet.

## 13. Disposal considerations

Dispose of the substance and its container through an authorised facility under the Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 where the waste is scheduled under those Rules, and otherwise as non-hazardous industrial waste, in each case under the conditions of the State Pollution Control Board consent in force at the site. Whether a particular waste stream is scheduled depends on the substance and on what it has been mixed with, so classify the waste before consigning it. Do not reuse empty containers for any other purpose.

## 14. Transport information

|                             |                                                                    |
|-----------------------------|--------------------------------------------------------------------|
| <b>UN number</b>            | Not regulated for transport                                        |
| <b>Class</b>                | Not applicable - not a dangerous good under ADR, IMDG, IATA or DOT |
| <b>Packing group</b>        | Not applicable                                                     |
| <b>Proper shipping name</b> | Not applicable - not regulated for transport                       |

## 15. Regulatory information

Supply in India is subject to the Manufacture, Storage and Import of Hazardous Chemical Rules, 1989 where the substance is scheduled, and to any product-specific licensing named on the product page. Classification and labelling follow the GHS as adopted in the jurisdiction of use.

**Note:** Name the hydrate. 'Magnesium sulphate' without qualification is ambiguous: the heptahydrate (CAS 10034-99-8, MW 246.47) contains about 51% water of crystallisation, the monohydrate/kieserite (CAS 14168-73-1) and the anhydrous salt (CAS 7487-88-9, MW 120.4) do not. On an MgO or Mg basis the heptahydrate is roughly 9.8% Mg / 16.3% MgO against about 20% Mg for the anhydrous salt, so a fertiliser or feed customer buying on Mg content will find a weight-for-weight substitution roughly half strength. Widely circulated SDSs for this product contain two errors worth guarding against: one lists it as a 'water reactive material', which is wrong - magnesium sulphate heptahydrate simply dissolves in water and is not water-reactive in any hazard sense; and several give no melting point or give the anhydrous decomposition temperature instead of the approximately 48 C at which the heptahydrate melts in its own water. Do not copy either. The material is not classified and not regulated for transport in any mode, so the honest commercial statement is that no GHS label elements are required - resist the temptation to add a Warning pictogram for appearance's sake.

## 16. Other information

|                      |                     |
|----------------------|---------------------|
| <b>Version</b>       | 1.0                 |
| <b>Date of issue</b> | 07 October 2026     |
| <b>Supersedes</b>    | No previous version |

**Regulatory basis as at the date of issue**

EU CLP Regulation 1272/2008 as amended, including Annex VI harmonised classifications; UN Model Regulations and the IMDG Code Amendment 42-24, mandatory from 1 January 2026; ADR 2025; and, in India, the Manufacture, Storage and Import of Hazardous Chemical Rules 1989 and the Central Motor Vehicles Rules 1989.

**How this sheet was compiled and what governs.** This sheet was prepared by Velora Chemicals Private Limited as the supplier, from PubChem, the ECHA CLP inventory including Annex VI harmonised classifications, ILO International Chemical Safety Cards and published producer safety data sheets. Values that could not be confirmed from those sources are shown as "Not available" rather than estimated. **The producer's safety data sheet for the specific grade and lot supplied is the governing document** and is issued with the consignment; where the two differ, the producer's sheet prevails. This sheet carries no warranty of the properties of any particular batch. Velora Chemicals Private Limited is a bulk supplier and trader, not a manufacturer.

**Sources consulted:** [https://chemicalsafety.ilo.org/dyn/icsc/showcard.display?p\\_version=2&p\\_card\\_id=1197](https://chemicalsafety.ilo.org/dyn/icsc/showcard.display?p_version=2&p_card_id=1197);  
<https://www.hillbrothers.com/pdf/downloads/msds/sds/n/magnesium-sulfate-sds.pdf>;  
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