SAFETY DATA SHEET

MAGNESIUM SULPHATE HEPTAHYDRATE

CAS No.: 10034-99-8

This Safety Data Sheet is issued by Suraj Chemicals as the distributor/supplier of record, based on manufacturer and published GHS / regulatory reference data for this substance. Users should also consult the specific manufacturer's SDS where available.

1. IDENTIFICATION

GHS Product identifier

MAGNESIUM SULPHATE HEPTAHYDRATE
Epsom Salt; $MgSO_4 \cdot 7H_2O$
CAS: 10034-99-8

Other means of identification

Not relevant

Recommended use of the chemical and restrictions on use

Relevant uses: Fertiliser/soil amendment (magnesium and sulphur nutrient source), food-grade processing aid, bath-salt and personal-care formulations, industrial and textile processing. For industrial user only.

Uses advised against: All uses not specified in this section or in section 7.3.

Supplier's details

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2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

GHS:
Classification of this product has been carried out in accordance with the Globally Harmonized System of Classification and Labelling of Chemicals (GHS), based on well-established public data for Magnesium Sulphate Heptahydrate (CAS 10034-99-8). Based on available data, this substance does not meet the criteria for classification as hazardous under GHS.

Not classified as hazardous.

GHS label elements, including precautionary statements

GHS: No signal word required

Hazard statements

None required under GHS classification criteria.

Precautionary statements

P264: Wash exposed skin thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
P280: Wear eye protection/face protection when handling dust.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P501: Dispose of contents/container in accordance with local/regional/national regulations.

Other hazards which do not result in classification

Efflorescent under very dry conditions (may lose water of crystallisation to form lower hydrates). Not a PBT/vPvB substance.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Substances

Chemical description: Magnesium Sulphate Heptahydrate

In accordance with Annex 4.3.3 of the GHS, the product contains:

Identification	Chemical Name / Classification	Concentration
CAS: 10034-99-8	Magnesium Sulphate Heptahydrate – Not classified	≥95% (technical/commercial grade)

Exact assay confirmed on the product Certificate of Analysis. To obtain more information on the hazards of the substances, consult sections 11, 12 and 16.

Mixtures

Non-applicable (technical/commercial-grade single substance with minor process residuals)

4. FIRST AID MEASURES

Description of necessary first-aid measures

Request medical assistance if symptoms are severe or persist, showing the SDS of this product.

By inhalation

Dust may cause mechanical irritation to the respiratory tract. Remove person to fresh air.

By skin contact

Brush off excess solid. Wash skin with plenty of water.

By eye contact

Rinse eyes thoroughly with water for at least 15 minutes, holding eyelids open. Seek medical attention if irritation persists.

By ingestion/aspiration

Rinse mouth. Give water to drink if the person is conscious. Seek medical attention if discomfort occurs.

Most important symptoms/effects, acute and delayed

Mechanical/nuisance-dust irritation of eyes and respiratory tract is the principal effect expected from dust exposure. No specific systemic effects anticipated at normal occupational exposure levels.

Indication of immediate medical attention and special treatment needed, if necessary

Treat symptomatically. No specific antidote required.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

Suitable: Use extinguishing media appropriate to the surrounding fire (water spray, foam, dry chemical, CO_2).
Unsuitable: None known.

Specific hazards arising from the chemical

Non-combustible, non-flammable. Not classified as an oxidiser. No unusual fire or explosion hazard.

Special protective actions for fire-fighters

No special measures required beyond standard fire-fighting practice. Wear self-contained breathing apparatus in enclosed or poorly ventilated areas.

Additional provisions

Cool fire-exposed containers with water spray if safe to do so.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Avoid dust generation. Use PPE described in section 8.

For emergency responders

Wear appropriate protective equipment (see section 8).

Environmental precautions

Avoid large releases to soil, drains or watercourses. Contain if possible.

Methods and materials for containment and cleaning up

Sweep up or vacuum dry material and place in a suitable, labelled container for reuse or disposal. Avoid generating dust.

Reference to other sections

See sections 8 and 13.

7. HANDLING AND STORAGE

Precautions for safe handling

A. General precautions for safe use

Avoid contact with eyes. Avoid generating and inhaling dust. Use with adequate ventilation.

B. Technical recommendations for the prevention of fires and explosions

Non-combustible; no specific fire/explosion prevention measures required beyond general good practice.

C. Technical recommendations on general occupational hygiene

Do not eat, drink or smoke while handling. Wash hands thoroughly after handling.

D. Technical recommendations to prevent environmental risks

Prevent uncontrolled discharge to drains or watercourses.

Conditions for safe storage, including any incompatibilities

A. Specific storage requirements

Storage condition	Store in tightly closed containers/bags in a cool, dry, well-ventilated place
Incompatible materials	Strong oxidising agents, barium salts, lead salts (forms insoluble sulfates)

B. General conditions for storage

Keep dry to prevent caking/clumping. Store away from incompatible materials listed above.

Specific end use(s)

Except for the instructions already specified, it is not necessary to provide any special recommendation regarding the uses of this product.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

Identification	Occupational Exposure Limit Type	Value
Magnesium Sulphate Heptahydrate CAS: 10034-99-8	No substance-specific OEL established (treat as particulate not otherwise classified)	General inert-dust limit: 10 mg/m³ (total dust) / 3 mg/m³ (respirable)

Appropriate engineering controls

Provide local exhaust ventilation where dust is generated to keep airborne concentrations below occupational exposure limits.

B. Respiratory protection

Not normally required with adequate ventilation; use a particulate filter respirator (FFP2 type) if dust levels are elevated.

C. Specific protection for the hands

Chemical-resistant gloves recommended for prolonged or repeated contact.

D. Eye and face protection

Safety glasses with side shields or chemical goggles when handling dust.

E. Bodily protection

Standard industrial work clothing.

F. Additional emergency measures

Eyewash station and washing facilities should be available in the work area.

Environmental exposure controls

Prevent uncontrolled discharge to the environment; see subsection 7.1.D.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	
Physical state at 20°C	Solid
Appearance	White to colorless crystalline solid
Odor	Odorless
Odour threshold	Not applicable
Volatility	
Boiling point	Not applicable (solid, decomposes/melts as below)
Melting point	150°C (loses water of crystallisation; anhydrous form decomposes above ~1100°C)
Vapour pressure	Negligible
Evaporation rate	Not applicable (solid)
Product Description	
Molecular weight	246.47 g/mol
Density	1.68 g/cm³
pH (aqueous solution)	5.5–7.5 (neutral to mildly acidic, 5% solution)
Solubility in water at 20°C	~71 g/100 mL (freely soluble)
Flammability	
Flash Point	Non-applicable (non-combustible solid)
Flammability (solid, gas)	Not flammable
Autoignition temperature	Not applicable
Lower / Upper flammability limit	Not applicable

Other information

Explosive properties	Not applicable
Oxidising properties	Not classified as an oxidiser
Corrosive to metals	Not classified

10. STABILITY AND REACTIVITY

Reactivity

No hazardous reactivity expected under normal conditions of storage, handling and use.

Chemical stability

Chemically stable under the indicated conditions of storage, handling and use.

Possibility of hazardous reactions

Hazardous polymerisation does not occur. Under specified conditions, hazardous reactions leading to excessive temperature or pressure are not expected.

Conditions to avoid

Shock/Friction	Contact with Air	Increase in Temperature	Sunlight	Humidity
Not applicable	Not applicable	Not applicable	Not applicable	Keep dry – caking/clumping

Incompatible materials

Strong oxidising agents, barium salts, lead salts (forms insoluble sulfates)

Hazardous decomposition products

None expected under normal conditions of storage and use.

11. TOXICOLOGICAL INFORMATION

Information on toxicological effects

In case of exposure that is repetitive, prolonged, or at concentrations higher than the recommended occupational exposure limits, adverse health effects may result depending on the means of exposure:

A. Ingestion (acute effect)
Low acute oral toxicity. Large doses may cause gastrointestinal discomfort.

B. Inhalation (acute effect)
Dust may cause mechanical irritation of the nose, throat and respiratory tract.

C. Contact with skin and eyes (acute effect)
Skin: not expected to be irritating under normal handling. Eyes: dust may cause mechanical irritation.

D. CMR effects (carcinogenicity, mutagenicity, reproductive toxicity)
Not listed as a carcinogen by IARC, NTP or OSHA. Classification criteria for mutagenicity/reproductive toxicity are not met based on available data.

E. Sensitizing effects
Classification criteria for respiratory or skin sensitisation are not met based on available data.

F. Specific target organ toxicity (STOT) – single exposure
Classification criteria are not met based on available data.

G. Specific target organ toxicity (STOT) – repeated exposure
Classification criteria are not met based on available data.

H. Aspiration hazard
Not applicable (solid).

Product-specific toxicological information

Identification	Acute Toxicity	Genus
Magnesium Sulphate Heptahydrate CAS: 10034-99-8	LD50 oral: >5000 mg/kg (practically non-toxic)	Rat

12. ECOLOGICAL INFORMATION

Low aquatic toxicity as the dissociated ions; a naturally occurring mineral salt (magnesium and sulphate are common in fresh and marine waters).

Toxicity
Low order of aquatic toxicity as the intact inorganic salt; large discharges may alter local ionic strength/salinity.

Persistence and degradability
Inorganic salt; biodegradation is not applicable.

Bioaccumulative potential
Not expected to bioaccumulate.

Mobility in soil

Koc	Henry	Dry Soil	Moist Soil
Not applicable	Not applicable	Mobility depends on water solubility (see section 9)	

Results of PBT and vPvB assessment
Not applicable (inorganic substance).

Other adverse effects
None expected under normal use.

13. DISPOSAL CONSIDERATIONS

Disposal methods
Not classified as hazardous waste. Dissolve/dilute and dispose of in accordance with local discharge consent, or dispose of via a licensed waste contractor.
Refer to national and local regulations on waste management.

14. TRANSPORT INFORMATION

Transport of dangerous goods by land (ADR/RID)

14.1 UN number	Not regulated
14.2 UN proper shipping name	Magnesium Sulphate Heptahydrate – non-hazardous for transport
14.3 Transport hazard class(es)	N/A
14.4 Packing group	N/A
14.5 Environmental hazard	No
14.6 Special precautions for user	None
14.7 Transport in bulk (Annex II MARPOL 73/78, IBC Code)	Not applicable

Transport of dangerous goods by sea (IMDG)

14.1 UN number	Not regulated
14.2 UN proper shipping name	Magnesium Sulphate Heptahydrate – non-hazardous for transport
14.3 Transport hazard class(es)	N/A
14.4 Packing group	N/A
14.5 Marine pollutant	No
14.6 Special precautions for user	None
14.7 Transport in bulk (Annex II MARPOL 73/78, IBC Code)	Not applicable

Transport of dangerous goods by air (IATA/ICAO)

14.1 UN number	Not regulated
14.2 UN proper shipping name	Magnesium Sulphate Heptahydrate – non-hazardous for transport
14.3 Transport hazard class(es)	N/A
14.4 Packing group	N/A
14.5 Environmental hazard	No
14.6 Special precautions for user	None
14.7 Transport in bulk (Annex II MARPOL 73/78, IBC Code)	Not applicable

15. REGULATORY INFORMATION

Safety, health and environmental regulations specific for the product in question

It is recommended to use the information in this SDS as data for a local risk evaluation for handling, use, storage and disposal.

Other legislation

Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989
The Factories Act, 1948 (Act No. 63 of 1948), as amended by the Factories (Amendment) Act, 1987 (Act 20 of 1987)

16. OTHER INFORMATION

Legislation related to safety data sheets

This safety data sheet has been designed in accordance with Annex 4 – Guidance on the preparation of Safety Data Sheets of the Globally Harmonized System of Classification and Labelling of Chemicals (GHS).

Texts of the legislative phrases mentioned in sections 2 and 3

None (not classified as hazardous under GHS).

Advice related to training

Minimal training is recommended to prevent industrial risks for staff using this product, in order to facilitate their comprehension and interpretation of this safety data sheet, as well as the label on the product.

Principal bibliographical sources

Publicly available GHS classification and physicochemical reference data for Magnesium Sulphate Heptahydrate (CAS 10034-99-8).

Abbreviations and acronyms

LD50: Lethal Dose 50 | Koc: Partition coefficient of organic carbon | IARC: International Agency for Research on Cancer | PBT: Persistent, Bioaccumulative and Toxic | vPvB: Very Persistent and Very Bioaccumulative

Disclaimer: The information contained in this safety data sheet is based on sources, technical knowledge and current legislation, without being able to guarantee its accuracy. This information cannot be considered a guarantee of the properties of the product; it is simply a description of the security requirements. The occupational methodology and conditions for users of this product are not within Suraj Chemicals' awareness or control, and it is ultimately the responsibility of the user to take the necessary measures to obtain the legal requirements concerning the manipulation, storage, use and disposal of chemical products. The information on this safety data sheet only refers to this product, which should not be used for needs other than those specified.

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