

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

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| 1.1 Product identifier | |
| Trade name | <u>Magnesium sulfate, anhydrous</u> |
| Stock number: | 33337 |
| CAS Number: | 7487-88-9 |
| EC number: | 231-298-2 |
| 1.2 Relevant identified uses of the substance or mixture and uses advised against. | |
| Identified use: | SU24 Scientific research and development |
| 1.3 Details of the supplier of the safety data sheet | |
| Manufacturer/Supplier: | Alfa Aesar GmbH & Co.KG A Johnson Matthey Company Zeppelinstr. 7b 76185 Karlsruhe / Germany Tel: +49 (0) 721 84007 280 Fax: +49 (0) 721 84007 300 Email: tech@alfa.com www.alfa.com |
| Informing department: | Product safety Tel + +049 (0) 7275 988687-0 |
| 1.4 Emergency telephone number: | Carechem 24: +44 (0) 1235 239 670 (Multi-language emergency number) Poison Information Center Mainz www.giftinfo.uni-mainz.de Telephone: +49(0)6131/19240 |

SECTION 2: Hazards identification

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| 2.1 Classification of the substance or mixture | |
| Classification according to Regulation (EC) No 1272/2008 | The substance is not classified as hazardous to health or the environment according to the CLP regulation. |
| Classification according to Directive 67/548/EEC or Directive 1999/45/EC | Not applicable |
| Information concerning particular hazards for human and environment: | Not applicable |
| Other hazards that do not result in classification | No information known. |
| 2.2 Label elements | |
| Labelling according to Regulation (EC) No 1272/2008 | Not applicable |
| Hazard pictograms | Not applicable |
| Signal word | Not applicable |
| Hazard statements | Not applicable |
| 2.3 Other hazards | |
| Results of PBT and vPvB assessment | |
| PBT: | Not applicable. |
| vPvB: | Not applicable. |

SECTION 3: Composition/information on ingredients

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|---------------------------|-----------------------------|
| 3.1 Substances | |
| CAS# Designation: | 7487-88-9 Magnesium sulfate |
| Identification number(s): | |
| EC number: | 231-298-2 |

SECTION 4: First aid measures

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| 4.1 Description of first aid measures | |
| After inhalation | Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist. Seek immediate medical advice. |
| After skin contact | Instantly wash with water and soap and rinse thoroughly. Seek immediate medical advice. |
| After eye contact | Rinse opened eye for several minutes under running water. Then consult doctor. |
| After swallowing | Seek medical treatment. |
| 4.2 Most important symptoms and effects, both acute and delayed | No further relevant information available. |
| 4.3 Indication of any immediate medical attention and special treatment needed | No further relevant information available. |

SECTION 5: Firefighting measures

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| 5.1 Extinguishing media | |
| Suitable extinguishing agents | Use fire fighting measures that suit the environment. |
| 5.2 Special hazards arising from the substance or mixture | |
| | If this product is involved in a fire, the following can be released: Sulphur oxides (SOx) Metal oxide |
| 5.3 Advice for firefighters | |
| Protective equipment: | Wear self-contained breathing apparatus. Wear full protective suit. |

SECTION 6: Accidental release measures

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| 6.1 Personal precautions, protective equipment and emergency procedures | |
| | Wear protective equipment. Keep unprotected persons away. Ensure adequate ventilation |
| 6.2 Environmental precautions: | Do not allow material to be released to the environment without proper governmental permits. Do not allow product to reach sewage system or water bodies. Do not allow to enter the ground/soil. |
| 6.3 Methods and material for containment and cleaning up: | Collect mechanically. |
| Prevention of secondary hazards: | No special measures required. |
| 6.4 Reference to other sections | See Section 7 for information on safe handling See section 8 for information on personal protection equipment. See Section 13 for information on disposal. |

SECTION 7: Handling and storage

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| 7.1 Precautions for safe handling | |
| | Handle under dry protective gas. Keep containers tightly sealed. Store in cool, dry place in tightly closed containers. |
| Information about protection against explosions and fires: | The product is not flammable |

Trade name **Magnesium sulfate, anhydrous**

(Contd. of page 1)

7.2 Conditions for safe storage, including any incompatibilities

Storage Requirements to be met by storerooms and containers: No special requirements.

Information about storage in one common storage facility: Store away from water.
Store away from oxidizing agents.

Further information about storage conditions: Store under dry inert gas.
This product is hygroscopic.
Keep container tightly sealed.
Store in cool, dry conditions in well sealed containers.
Protect from humidity and keep away from water.

7.3 Specific end use(s) No further relevant information available.

SECTION 8: Exposure controls/personal protection

Additional information about design of technical systems: Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

8.1 Control parameters

Components with critical values that require monitoring at the workplace: The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

Additional information: No data

8.2 Exposure controls

Personal protective equipment

General protective and hygienic measures The usual precautionary measures should be adhered to in handling the chemicals.
Keep away from foodstuffs, beverages and food.
Instantly remove any soiled and impregnated garments.
Wash hands during breaks and at the end of the work.
Maintain an ergonomically appropriate working environment.

Breathing equipment: Use breathing protection with high concentrations.
Protection of hands: Check protective gloves prior to each use for their proper condition.
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

Material of gloves: Impervious gloves
Penetration time of glove material: Not determined
Eye protection: Safety glasses
Body protection: Protective work clothing.

SECTION 9: Physical and chemical properties**9.1 Information on basic physical and chemical properties**

General Information

Appearance:

Form: Powder
Colour: White
Smell: Odourless
Odour threshold: Not determined.

pH-value: Not applicable.

Change in condition

Melting point/Melting range: 1124 °C (dec)
Boiling point/Boiling range: Not determined
Sublimation temperature / start: Not determined
Inflammability (solid, gaseous) Not determined.
Ignition temperature: Not determined
Decomposition temperature: Not determined
Self-inflammability: Not determined.
Critical values for explosion:

Lower: Not determined
Upper: Not determined
Steam pressure: Not applicable.
Density at 20 °C 2,66 g/cm³
Relative density Not determined.
Vapour density Not applicable.
Evaporation rate Not applicable.
Solubility in / Miscibility with

Water at 0 °C: 260 g/l
Soluble
Not determined.

Partition coefficient (n-octanol/water): Not determined.
Viscosity:

dynamic: Not applicable.
kinematic: Not applicable.

9.2 Other information No further relevant information available.

SECTION 10: Stability and reactivity

10.1 Reactivity No information known.
10.2 Chemical stability Stable under recommended storage conditions.
Thermal decomposition / conditions to be avoided: No decomposition if used and stored according to specifications.
10.3 Possibility of hazardous reactions Reacts with strong oxidizing agents
10.5 Incompatible materials: Water/moisture
Oxidizing agents
10.6 Hazardous decomposition products: Sulphur oxides (SO_x)
Metal oxide

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity: The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute toxicity data for components in this product.

LD/LC50 values that are relevant for classification: No data
Skin irritation or corrosion: May cause irritation
Eye irritation or corrosion: May cause irritation

(Contd. on page 3)
DE/E

Safety data sheet
according to 1907/2006/EC, Article 31

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Trade name **Magnesium sulfate, anhydrous**

(Contd. of page 2)

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| Sensitization: | No sensitizing effect known. |
| Germ cell mutagenicity: | The Registry of Toxic Effects of Chemical Substances (RTECS) contains mutation data for components in this product. |
| Carcinogenicity: | No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH. |
| Reproductive toxicity: | The Registry of Toxic Effects of Chemical Substances (RTECS) contains reproductive data for components in this product. |
| Specific target organ system toxicity - repeated exposure: | No effects known. |
| Specific target organ system toxicity - single exposure: | No effects known. |
| Aspiration hazard: | No effects known. |
| Additional toxicological information: | To the best of our knowledge the acute and chronic toxicity of this substance is not fully known. |

SECTION 12: Ecological information

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| 12.1 Toxicity | |
| Aquatic toxicity: | No further relevant information available. |
| 12.2 Persistence and degradability | No further relevant information available. |
| 12.3 Bioaccumulative potential | No further relevant information available. |
| 12.4 Mobility in soil | No further relevant information available. |
| Additional ecological information: | |
| General notes: | Do not allow material to be released to the environment without proper governmental permits. Water hazard class 1 (Self-assessment): slightly hazardous for water. Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system. Avoid transfer into the environment. |
| 12.5 Results of PBT and vPvB assessment | |
| PBT: | Not applicable. |
| vPvB: | Not applicable. |
| 12.6 Other adverse effects | No further relevant information available. |

SECTION 13: Disposal considerations

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| 13.1 Waste treatment methods | |
| Recommendation | Hand over to disposers of hazardous waste. Must be specially treated under adherence to official regulations. Consult state, local or national regulations for proper disposal. |
| Uncleaned packagings: | |
| Recommendation: | Disposal must be made according to official regulations. |
| Recommended cleaning agent: | Water, if necessary with cleaning agent. |

SECTION 14: Transport information

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| UN-Number | |
| ADR, ADN, IMDG, IATA | Not applicable |
| 14.2 UN proper shipping name | |
| ADR, ADN, IMDG, IATA | Not applicable |
| 14.3 Transport hazard class(es) | |
| ADR, ADN, IMDG, IATA | |
| Class | Not applicable |
| Packing group | |
| ADR, IMDG, IATA | Not applicable |
| 14.5 Environmental hazards: | Not applicable. |
| 14.6 Special precautions for user | Not applicable. |
| 14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code | Not applicable. |
| UN "Model Regulation": | - |

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

Australian Inventory of Chemical Substances Substance is not listed.

Standard for the Uniform Scheduling of Drugs and Poisons

7487-88-9 | Magnesium sulfate

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| National regulations | |
| Information about limitation of use: | For use only by technically qualified individuals. |
| Water hazard class: | Water hazard class 1 (Self-assessment): slightly hazardous for water. |
| Other regulations, limitations and prohibitive regulations | |
| ELINCS (European List of Notified Chemical Substances) | Substance is not listed. |
| Substances of very high concern (SVHC) according to REACH, Article 57 | Substance is not listed. |
| REACH - Pre-registered substances | Substance is not listed. |
| 15.2 Chemical safety assessment: | A Chemical Safety Assessment has not been carried out. |

SECTION 16: Other information

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing data specification sheet: Health, Safety and Environmental Department.

Abbreviations and acronyms: ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent

DE/E