

## Safety Data Sheet **MAGNESIUM Powder**

SDS no. 0K0H79MD • Version 1.0 • Date of issue: 2024-03-19

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### SECTION 1: Identification

#### GHS Product identifier

Product name MAGNESIUM Powder

#### Other means of identification

MAGNESIUM Powder LR ML031

#### Recommended use of the chemical and restrictions on use

Pyrotechnics, signal flares, incendiary and tracer bullets, flash photography, reducing agent, optical mirrors, dry and wet batteries, antiknock gasoline additives, desulfurising iron in steel manufacture, magnesium compounds and Grignard syntheses, precision instruments and laboratory reagent.

#### Supplier's details

Name ChemSupply Australia Pty Ltd  
Address 38-50 Bedford Street  
5013 Gillman South Australia  
Australia  
  
Telephone 08 8440 2000  
email [www.chemsupply.com.au](http://www.chemsupply.com.au)

#### Emergency phone number

CHEMCALL 1800 127 406 (Australia) / +64-4-917-9888 (International)

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### SECTION 2: Hazard identification

#### General hazard statement

Dangerous goods of Class 4.3 (Dangerous When Wet) are incompatible in a placard load with any of the following: Class 1, Class 2.1, Class 5, Class 7, Class 8.

#### Classification of the substance or mixture

#### GHS classification in accordance with: UN GHS revision 7

- Flammable solids, Cat. 1
- Substances and mixtures, which in contact with water, emit flammable gases, Cat. 2
- Self-heating substances and mixtures, Cat. 1

#### GHS label elements, including precautionary statements

Pictograms



Signal word

Danger

Hazard statement(s)

H228 Flammable solid  
H251 Self-heating; may catch fire  
H261 In contact with water releases flammable gas

Precautionary statement(s)

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P223 Do not allow contact with water.  
P235 Keep cool.  
P240 Ground and bond container and receiving equipment.  
P241 Use explosion-proof [electrical/ventilating/lighting/...] equipment.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.  
P302+P335+P334 IF ON SKIN: Brush off loose particles from skin. Immerse in cool water [or wrap in wet bandages].  
P370+P378 In case of fire: Use agents recommended in Section 5 of SDS for extinction  
P402+P404 Store in a dry place. Store in a closed container.  
P407 Maintain air gap between stacks or pallets.  
P410 Protect from sunlight.  
P420 Store separately.  
P501 Dispose of contents/container to an approved waste disposal facility

SECTION 3: Composition/information on ingredients

Mixtures

Molecular weight: 24.31

Components

Component	CAS no.	Concentration
MAGNESIUM POWDER OR TURNINGS, stabilized (EC no.: 231-104-6; Index no.: 012-002-00-9)	7439-95-4	<= 100 % (weight)
CLASSIFICATIONS: Flammable solids, Cat. 1; Self-heating substances and mixtures, Cat. 1; Substances and mixtures, which in contact with water, emit flammable gases, Cat. 2. HAZARDS: H228 - Flammable solid; H252 - Self-heating in large quantities; may catch fire; H261 - In contact with water releases flammable gas.		

SECTION 4: First-aid measures

Description of necessary first-aid measures

General advice

First Aid Facilities: Maintain eyewash fountain in work area.

If inhaled

If inhaled, remove from contaminated area to fresh air immediately. If breathing is difficult, give oxygen. Apply artificial respiration with a respiratory medical device if not breathing. Do not use mouth to mouth resuscitation. Immediately medical attention is required.

In case of skin contact	Wash affected area thoroughly with soap and water. Remove contaminated clothing and wash before reuse or discard. If symptoms develop seek medical attention. Brush off loose particles from skin. Immerse in cool water/wrap in wet bandages.
In case of eye contact	Immediately irrigate with copious quantity of water for at least 15 minutes. Eyelids to be held open. In all cases of eye contamination it is a sensible precaution to seek medical advice.
If swallowed	Rinse mouth thoroughly with water immediately, repeat until all traces of product have been removed. DO NOT INDUCE VOMITING. Seek immediate medical advice.

**Most important symptoms/effects, acute and delayed**

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

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

For advice, contact the National Poisons Information Centre (Phone Australia 13 11 26; New Zealand 0800 764 766) or a doctor.

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**SECTION 5: Fire-fighting measures**

**Suitable extinguishing media**

DO NOT USE WATER OR FOAM, carbon tetrachloride or carbon dioxide.

Use DRY sand, graphite powder or Met-L-X powder.

If safe to do so, move undamaged containers from the fire area. Avoid getting water inside the containers.

**Specific hazards arising from the chemical**

Emits toxic fumes of magnesium oxide under fire conditions.

May ignite on contact with water or moist air. May react violently or explosively on contact with water.

**Special protective actions for fire-fighters**

Wear SCBA and chemical splash suit. Structural firefighter's uniform will provide limited protection. Protect eyes and skin against flying particles. Avoid direct viewing of magnesium fires as eye injury may result.

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**SECTION 6: Accidental release measures**

**Personal precautions, protective equipment and emergency procedures**

Evacuate the area of all non-essential personnel. Avoid substance contact. Avoid generation of dusts: do not inhale dusts. Ensure supply of fresh air in enclosed rooms.

Wear protective clothing specified for normal operations (see Section 8)

**Methods and materials for containment and cleaning up**

Eliminate all ignition sources (no smoking, flares, sparks or flame) within at least 25m. Do NOT touch or walk through spilled material. Stop leak if safe to do so. Prevent entry into waterways, drains, confined areas.

DO NOT GET WATER inside containers or in contact with substance.

Small spill: Cover with DRY earth, sand or other non-combustible material followed by a plastic sheet to minimize spreading or contact with rain.

Large Spill:

SEEK EXPERT ADVICE ON HANDLING AND DISPOSAL.

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**SECTION 7: Handling and storage**

**Precautions for safe handling**

Avoid generation or accumulation of dusts. Do not breathe dust. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure. Use in well ventilated areas away from all ignition sources. In case of insufficient ventilation, wear suitable respiratory equipment. Prevent all contact with water and with moist atmosphere. Take precautionary measures against static discharges.

**Conditions for safe storage, including any incompatibilities**

Store away from sources of heat or ignition. Store in a cool, dry place. Store away from acids. Keep containers closed at all times. Separate from incompatibles, combustibles, or other readily oxidizable materials.

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**SECTION 8: Exposure controls/personal protection**

**Appropriate engineering controls**

Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, gas, etc.) below recommended exposure limits.

**Individual protection measures, such as personal protective equipment (PPE)**

**Eye/face protection**

The use of a face shield, chemical goggles or safety glasses with side shield protection as appropriate. Must comply with Australian Standards AS 1337 and be selected and used in accordance with AS 1336.

**Skin protection**

Clean impervious clothing should be worn. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals.

Hand Protection: Ensure hand protection complies with AS 2161, Occupational protective gloves - Selection, use and maintenance.

**Body protection**

Clean clothing or protective clothing should be worn, preferably with an apron. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals.

**Respiratory protection**

Where ventilation is not adequate, respiratory protection may be required. Avoid breathing dust, vapours or mists. Respiratory protection should comply with AS 1716 - Respiratory Protective Devices and be selected in accordance with AS 1715 - Selection, Use and Maintenance of Respiratory Protective Devices. Filter capacity and respirator type depends on exposure levels. In event of emergency or planned entry into unknown concentrations a positive pressure, full-facepiece SCBA should be used. If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, maintenance and inspection.

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**SECTION 9: Physical and chemical properties**

**Basic physical and chemical properties**

Physical state	Solid
Appearance	Silvery-grey powder.
Color	No data available.
Odor	Odourless.
Odor threshold	No data available.
Melting point/freezing point	651 °C
Boiling point or initial boiling point and boiling range	1100 °C
Flammability	Highly flammable.
Lower and upper explosion limit/flammability limit	Flammable Limits - Lower: 0.04%

# Safety Data Sheet

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Flash point	500 °C
Explosive properties	No data available.
Auto-ignition temperature	510 °C
Decomposition temperature	No data available.
Oxidizing properties	No data available.
pH	No data available.
Kinematic viscosity	No data available.
Solubility	Solubility in Water: Insoluble in water.
Partition coefficient n-octanol/water (log value)	No data available.
Vapor pressure	1 mm Hg (@ 621 °C)
Evaporation rate	No data available.
Density and/or relative density	Specific Gravity: 1.74
Relative vapor density	No data available.
Particle characteristics	No data available.

### Supplemental information regarding physical hazard classes

No data available.

### Further safety characteristics (supplemental)

Other Information: Soluble in concentrated hydrogen fluoride and ammonium salts.  
Insoluble in chromium trioxides, mineral acids and alkalis.

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## SECTION 10: Stability and reactivity

### Reactivity

Stable under normal conditions of storage and handling.

Reacts with incompatible materials. Oxidises on contact with air

### Chemical stability

Sensitive to air. Sensitive to moisture.

### Possibility of hazardous reactions

Contact with water or acids liberates flammable hydrogen gas. Risk of dust explosion.

### Conditions to avoid

Exposure to moisture. Exposure to air. Dust generation. Heat, sources of ignition. Incompatibles.

### Incompatible materials

Acids, alkali hydroxides, alkali salts, alcohols, bases, carbonates, cyanides, halogens, halogenated hydrocarbons, hydrogen halides, iodine, metallic oxides, nitrates, non-metallic oxides, non-metals, oxidising compounds, perchlorates, peroxi compounds, sulfates, and water.

### Hazardous decomposition products

Emits toxic fumes of magnesium oxide under fire conditions.

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## SECTION 11: Toxicological information

### Information on toxicological effects

#### Acute toxicity

Ingestion: May be harmful if swallowed. May cause irritation to the gastrointestinal tract with symptoms including nausea, vomiting, abdominal pain and diarrhea. This may lead to a lack of appetite and weight loss.

Inhalation: May be harmful if inhaled. Inhalation of magnesium dust or fumes may irritate the respiratory tract (nose, throat, lungs). Symptoms include burning sensation, coughing, chest pain, fever, wheezing, laryngitis, shortness of breath, headache, nausea, vomiting, and leukocytosis. Metal fume fever may result when the compound is heated, emitting magnesium fumes, with symptoms similar to the common cold, including chills and stiffness of the head as well as high temperatures, nausea, coughing and general weakness.

**Skin corrosion/irritation**

Powdered magnesium applied to abraded skin causes inflammatory reaction, where the absorption leads to slow wound healing. Particles embedded in skin may produce gaseous blebs with a protracted course, skin eruptions and skin burns.

**Serious eye damage/irritation**

Dust is irritating to eyes. Small particles may penetrate the eyes and slow down the healing process. High concentrations of dust may cause mechanical irritation. Watching a magnesium fire can cause eye injury.

**Respiratory or skin sensitization**

No data available.

**Germ cell mutagenicity**

No data available.

**Carcinogenicity**

No data available.

**Reproductive toxicity**

No data available.

**Summary of evaluation of the CMR properties**

No data available.

**Specific target organ toxicity (STOT) - single exposure**

No data available.

**Specific target organ toxicity (STOT) - repeated exposure**

No data available.

**Aspiration hazard**

No data available.

**Additional information**

Chronic Effects: Chronic nasopharyngitis, coldness of extremities with cyanosis and tremor have been reported. Magnesium fumes can cause metal fume fever. The central nervous system, kidneys and cardiovascular system are targeted. Existing wounds contaminated with magnesium are very slow to heal.

Toxic levels of magnesium in the feed of broiler chicks resulted in poor growth, diarrhoea, and skeletal abnormalities. In drinking water magnesium appears to be the element most responsible for relationships between cardiovascular mortality and water hardness.

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**SECTION 12: Ecological information**

**Toxicity**

No data available.

**Persistence and degradability**

No data available.

**Bioaccumulative potential**

No data available.

**Mobility in soil**

No data available.

**Results of PBT and vPvB assessment**

No data available.

**Endocrine disrupting properties**

No data available.

**Other adverse effects**

No data available.

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**SECTION 13: Disposal considerations**

**Disposal methods**

**Product disposal**

Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers.

**Other disposal recommendations**

Do not discharge this material into waterways, drains and sewers.

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**SECTION 14: Transport information**

**ADG (Road and Rail)**

UN Number: 1418

Class: 4.3, 4.2

Packing Group: II

Proper Shipping Name: MAGNESIUM ALLOYS POWDER

**Hazchem emergency action code (EAC)**

4W

**IMDG**

UN Number: 1418

Class: 4.3, 4.2

Packing Group: II

EMS Number:

Proper Shipping Name: MAGNESIUM ALLOYS POWDER

**IATA**

UN Number: 1418

Class: 4.3, 4.2

Packing Group: II

Proper Shipping Name: MAGNESIUM ALLOYS POWDER

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**SECTION 15: Regulatory information**

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

**Australia SUSMP**

Poison Schedule: NS

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**SECTION 16: Other information**

**Further information/disclaimer**

ChemSupply Australia Pty Ltd does not warrant that this product is suitable for any use or purpose. The user must ascertain the suitability of the product before use or application intended purpose. Preliminary testing of the product before use or application is recommended. Any reliance or purported reliance upon ChemSupply Australia Pty Ltd with respect to any skill or judgement or advice in relation to the suitability of this product of any purpose is disclaimed. Except to the extent prohibited at law, any condition implied by any statute as to the merchantable quality of this product or fitness for any purpose is hereby excluded. This product is not sold by description. Where the provisions of Part V, Division 2 of the Trade Practices Act apply, the liability of ChemSupply Australia Pty Ltd is limited to the replacement of supply of equivalent goods or payment of the cost of replacing the goods or acquiring equivalent goods.

**Preparation information**

All information provided in this data sheet or by our technical representatives is compiled from the best knowledge available to us. However, since data, safety standards and government regulations are subject to change and the conditions of handling and use, or misuse, are beyond our control, we make no warranty either expressed or implied, with respect to the completeness or accuracy to the information contained herein. ChemSupply Australia Pty Ltd accepts no responsibility whatsoever for its accuracy or for any results that may be obtained by customers from using the data and disclaims all liability for reliance on information provided in this data sheet or by our technical representatives.

Standard for the Uniform Scheduling of Medicines and Poisons, Commonwealth of Australia

National Road Transport Commission, 'Australian Code for the Transport of Dangerous Goods by Road and Rail 7th. Ed.'

Safe Work Australia, 'National Code of Practice for the Preparation of Safety Data Sheets for Hazardous Chemicals', July 2020.

Safe Work Australia, 'National Guide for Classifying Hazardous Chemicals', July 2020.

Safe Work Australia, Workplace Exposure Standards for Airborne Contaminants, December 2019

Safe Work Australia, Hazardous Chemical Information System (HCIS), [hcis.safeworkaustralia.gov.au](http://hcis.safeworkaustralia.gov.au)

IATA, Dangerous Goods Regulations (DGR)

IMO, International Maritime Dangerous Goods Code (IMDG)