Safety Data Sheet MAGNESIUM Ribbon, Powder, Turnings

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SECTION 1: Identification

GHS Product identifier

Product name	MAGNESIUM Ribbon, Powder, Turnings

Other means of identification

Product	Product Code
Magnesium Ribbon TG	MT032
Magnesium Powder LR	ML031
Magnesium Powder TG	MT031
Magnesium Turnings LR	ML033

Recommended use of the chemical and restrictions on use

Reducing agent, thermite reactions, photographic flashbulbs 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

Emergency phone number

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

SECTION 2: Hazard identification

General hazard statement

Classified as dangerous goods according to the Australian Dangerous Goods Code (ADG).

Classified as Hazardous according to the Globally Harmonised System of classification and labelling of Chemicals (GHS) including Work, Health and Safety regulations, Australia.

Classification of the substance or mixture

GHS classification in accordance with: UN GHS revision 7

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

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.
P231+P232	Handle and store contents under inert gas/.... Protect from moisture.
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

Component	Identification	Weight %	Classifications
Magnesium powder or turnings, stabilized	CAS no.: 7439-95-4 EC no.: 231-104-6 Index no.: 012-002-00-9	<= 100 %	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 and drench facilities in work area.

If inhaled	If inhaled, remove from contaminated area to fresh air immediately. Apply artificial respiration if not breathing. If breathing is difficult, give oxygen. Get medical aid if cough or other symptoms appear.
In case of skin contact	Rinse with plenty of water. Get medical attention if irritation develops and persists.
In case of eye contact	If contact with the eye(s) occurs, wash with copious amounts of water for approximately 15 minutes holding eyelid(s) open. Take care not to rinse contaminated water into the non-affected eye. If persistent irritation occurs, obtain medical attention.
If swallowed	Rinse mouth thoroughly with water immediately, repeat until all traces of product have been removed. DO NOT INDUCE VOMITING. Seek medical advice if effects persist.

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.

SECTION 5: Fire-fighting measures

Suitable extinguishing media
Unsuitable Extinguishing Media: Water, foam and carbon dioxide.

Specific Methods: DO NOT USE WATER OR FOAM.
Small fire: Use dry chemical, soda ash, lime or sand.
If safe to do so, move undamaged containers from fire area.
Large fire: Use DRY sand, dry chemical, soda ash or lime or withdraw and let fire burn.
Cool containers with flooding quantities of water until well after fire is out. Avoid getting water inside containers.

Specific hazards arising from the chemical
Hazards from Combustion Products: Emits toxic fumes under fire conditions.

Specific hazards arising from the chemical: Produce flammable substances on contact with water. May ignite on contact with water or moist air. May react vigorously or explosively on contact with water. May be ignited by heat, sparks or flame. May re-ignite after fire is extinguished. Some are kept in or under flammable liquids. Fire will produce irritating, poisonous and/or corrosive gases. Containers may explode when heated. Runoff may create multiple fire or explosion hazard.

Special protective actions for fire-fighters
Wear SCBA and chemical splash suit. Structural firefighter's uniform may provide limited protection.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures
Avoid substance contact. Avoid generation of dusts: do not inhale dusts.
Ensure supply of fresh air in enclosed rooms. Evacuate the area of all non-essential personnel.

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 flames) within at least 25m. Do not touch or walk through spilled material. Stop leak if safe to do so - Prevent entry into waterways, drains or confined areas. Water spray may be used to knock down vapours or divert vapour clouds. 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 plastic sheet to minimize spreading or contact with rain.

Large Spill
SEEK EXPERT ADVICE ON HANDLING AND DISPOSAL.

SECTION 7: Handling and storage

Precautions for safe handling
Store away from sources of heat or ignition. Store away from oxidizing agents. Store away from acids. Keep containers closed at all times. Store at room temperature (15 - 25 °C). Keep dry and protect from direct sunlight.

Conditions for safe storage, including any incompatibilities
Corrosiveness: Non-corrosive in presence of glass. Magnesium is anodic to all other structural metals. Magnesium develops a corrosion-inhibiting film upon exposure to clean atmospheres and freshwater. However, the film breaks down in the presence of chlorides, sulphates and other media. It is rapidly attacked by mineral acids, except for chromic and hydrofluoric acids. It is however, resistant to dilute alkalies, aliphatic and aromatic hydrocarbons, particular alcohols, and dry bromine, chlorine and fluorine gases. Anodising magnesium improves its corrosion resistance.

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.

Body protection
Footwear: Safety boots in industrial situations is advisory, foot protection should comply with AS 2210, Occupational protective footwear - Guide to selection, care and use.

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

Respiratory protection
If engineering controls are not effective in controlling airborne exposure then an approved respirator with a replaceable vapor/ mist filter should be used. Refer to relevant regulations for further information concerning respiratory protective requirements. Reference should be made to Australian Standards AS/ NZS 1715, Selection, Use and Maintenance of Respiratory Protective Devices; and AS/ NZS 1716, Respiratory Protective Devices, in order to make any necessary changes for individual circumstances.

SECTION 9: Physical and chemical properties

Basic physical and chemical properties

Physical state	Solid
Appearance, such as physical state and colour	Metal strips, powder or turnings.
Colour	Silvery white
Odour	Odourless.

Odour threshold	No data available.
Melting point and freezing point	651 °C
Boiling point or initial boiling point and boiling range	1100 °C
Flammability	Flammable Sollid
Lower and upper explosion limit or lower and upper flammability limit	Flammable Limits - Lower: 0.04%
Flash point	636 °C.
Explosive properties	Water used on molten magnesium will produce hydrogen gas and may cause an explosion. Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard. Minimum explosible concentration 0.030 grams/litre.
Auto-ignition temperature	473 - 510 °C.
Decomposition temperature	No data available.
Oxidising properties	No data available.
pH	No data available.
Kinematic viscosity	No data available.
Solubility	Solubility in Water: Insoluble in cold water. Very slightly soluble with decomposition in hot water. [13] Solubility in Organic Solvents: Soluble in ammonium salts.
Partition coefficient — n-octanol/ water (logarithmic value)	No data available.
Vapour pressure	1 mm Hg @ 621 °C;
Evaporation rate	No data available.
Density and relative density	Specific Gravity: 1.738
Relative vapour density	No data available.
Particle characteristics	No data available.

Supplemental information regarding physical hazard classes
No data available.

Further safety characteristics (supplemental)
No data available.

SECTION 10: Stability and reactivity

Reactivity
Stable under normal conditions of storage and handling.

Reacts with incompatible materials

Chemical stability

Stable under ordinary conditions of use and storage. Slowly oxidizes in moist air.

Possibility of hazardous reactions
[25] Possibility of hazardous reactions: Violent chemical reaction with oxidizing agents. Reacts with water to create hydrogen gas and heat. Must be kept dry. Reacts with acids to form hydrogen gas which is highly flammable and explosive. Reacts violently with halogens, chlorinated solvents, chloromethane. Magnesium forms hazardous or explosive mixtures with aluminium and potassium perchlorate; ammonium nitrate; barium nitrate, barium dioxide and zinc; beryllium oxide; boron phosphodiiodide; bromobenzyl trifluoride; cadmium cyanide; cadmium oxide; calcium carbide; carbonates; carbon tetrachloride; chlorine; chlorine trifluoride; chloroform; cobalt cyanide; copper cyanide; copper sulfate(anhydrous), ammonium nitrate, potassium chlorate and water; cupric oxide; cupric sulfate; fluorine; gold cyanide; hydrogen and calcium carbonate; hydrogen iodide; hydrogen peroxide; iodine; lead cyanide; mercuric oxide; mercury cyanide; methyl chloride; molybdenum trioxide; nickel cyanide; nitric acid; nitrogen dioxide; oxygen (liquid); performic acid; phosphates; potassium chlorate; potassium perchlorate; silver nitrate; silver oxide; sodium perchlorate; sodium peroxide; sodium peroxide and carbon dioxide; stannic oxide; sulfates; trichloroethylene; zinc cyanide; zinc oxide.

Conditions to avoid
Heat, flames, ignition sources, water or moisture, moist air, air and incompatibles.

Incompatible materials
Water and acids will release hydrogen; reacts violently with halogens, chloromethane, carbonates, cyanides, chlorinated hydrocarbons, sulfates, and other metals. Incompatible with oxidizing agents, acid chlorides, bases and alcohols. Sensitive to air.

Hazardous decomposition products
Magnesium oxide, some metallic oxides. When exposed to acids and water, hydrogen will be produced.

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity
Ingestion: Magnesium metal does not have well-characterized toxicity. May cause abdominal pain and diarrhoea.

Inhalation: Inhalation of dusts or fumes may irritate the respiratory tract and may cause metal fume fever. Symptoms may include coughing, chest pain, fever, and leukocytosis.

Skin corrosion/irritation
Particles embedded in the skin may cause eruptions. Molten magnesium may cause serious skin burns.

Serious eye damage/irritation
High concentrations of dust may cause mechanical irritation. Watching a magnesium fire can cause eye injury.

Respiratory or skin sensitization
Not classified based on available information.

Germ cell mutagenicity
Not classified based on available information.

Carcinogenicity
Not classified based on available information.

Reproductive toxicity
Not classified based on available information.

Specific target organ toxicity (STOT) - single exposure
Not classified based on available information.

Specific target organ toxicity (STOT) - repeated exposure
Not classified based on available information.

Aspiration hazard
Not classified based on available information.

SECTION 12: Ecological information

Toxicity
Acute Toxicity - Fish: The following applies to magnesium compounds in general: lethal for fish 100 mg/l.

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.

SECTION 14: Transport information

ADG (Road and Rail)
UN Number: 1869
Class: 4.1
Packing Group: III
Proper Shipping Name: MAGNESIUM

Hazchem emergency action code (EAC)
4[Y]

IMDG
UN Number: 1869
Class: 4.1
Packing Group: III
EMS Number:
Proper Shipping Name: MAGNESIUM

IATA
UN Number: 1869
Class: 4.1
Packing Group: III
Proper Shipping Name: MAGNESIUM

SECTION 15: Regulatory information

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

Australia SUSMP
Poison Schedule: NS

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

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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 fot 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 Airbourne Contaminants, December 2019
Safe Work Australia, Hazardous Chemical Information System (HCIS), hcis.safeworkaustralia.gov.au
IATA, Dangerous Goods Regulations (DGR)
IMO, International Maritime Dangerous Goods Code (IMDG)