

# Safety data sheet

acc. to Safe Work Australia - Code of Practice



## Magnesium turnings $\geq 99,9\%$ , for synthesis

article number: **AE61**  
Version: **GHS 5.0 en**  
Replaces version of: 2022-10-20  
Version: (GHS 4)

date of compilation: 2017-01-23  
Revision: 2024-03-02

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

### 1.1 Product identifier

Identification of the substance	<b>Magnesium</b> turnings $\geq 99,9\%$ , for synthesis
Article number	AE61
CAS number	7439-95-4

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses:	Laboratory chemical Laboratory and analytical use
Uses advised against:	Do not use for private purposes (household). Food, drink and animal feedingstuffs.

### 1.3 Details of the supplier of the safety data sheet

Carl Roth GmbH + Co. KG  
Schoemperlenstr. 3-5  
D-76185 Karlsruhe  
Germany

**Telephone:** +49 (0) 721 - 56 06 0  
**Telefax:** +49 (0) 721 - 56 06 149  
**e-mail:** [sicherheit@carlroth.de](mailto:sicherheit@carlroth.de)  
**Website:** [www.carlroth.de](http://www.carlroth.de)

Competent person responsible for the safety data sheet: Department Health, Safety and Environment

**e-mail (competent person):** [sicherheit@carlroth.de](mailto:sicherheit@carlroth.de)

### 1.4 Emergency telephone number

Name	Street	Postal code/city	Telephone	Website
NSW Poisons Information Centre Childrens Hospital	Hawkesbury Road	2145 Westmead, NSW	131126	

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

Classification acc. to GHS

Section	Hazard class	Cat-egory	Hazard class and category	Hazard statement
2.7	Flammable solid	2	Flam. Sol. 2	H228
2.12	Substance and mixture which, in contact with water, emits flammable gas	2	Water-react. 2	H261

For full text of abbreviations: see SECTION 16

#### The most important adverse physicochemical, human health and environmental effects

In contact with water releases flammable gases which may ignite spontaneously.

# Safety data sheet

acc. to Safe Work Australia - Code of Practice



## Magnesium turnings $\geq 99,9\%$ , for synthesis

article number: **AE61**

### 2.2 Label elements

#### Labelling

#### Signal word

**Danger**

#### Pictograms

GHS02



#### Hazard statements

H228 Flammable solid  
H261 In contact with water releases flammable gases

#### Precautionary statements

##### Precautionary statements - prevention

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking  
P231+P232 Handle and store contents under inert gas. Protect from moisture  
P280 Wear protective gloves/protective clothing/eye protection/face protection

##### Precautionary statements - response

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 sand, carbon dioxide or powder extinguisher for extinction

##### Precautionary statements - storage

P402+P404 Store in a dry place. Store in a closed container

### 2.3 Other hazards

#### Results of PBT and vPvB assessment

According to the results of its assessment, this substance is not a PBT or a vPvB.

#### Endocrine disrupting properties

Does not contain an endocrine disruptor (ED) at a concentration of  $\geq 0,1\%$ .

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Name of substance	Magnesium
Molecular formula	Mg
Molar mass	24.31 g/mol
CAS No	7439-95-4

# Safety data sheet

acc. to Safe Work Australia - Code of Practice



## Magnesium turnings $\geq 99,9\%$ , for synthesis

article number: AE61

### SECTION 4: First aid measures

#### 4.1 Description of first aid measures



##### General notes

Take off contaminated clothing.

##### Following inhalation

Provide fresh air.

##### Following skin contact

Rinse skin with water/shower.

##### Following eye contact

Rinse cautiously with water for several minutes.

##### Following ingestion

Rinse mouth. Call a doctor if you feel unwell.

#### 4.2 Most important symptoms and effects, both acute and delayed

Symptoms and effects are not known to date.

#### 4.3 Indication of any immediate medical attention and special treatment needed

none

### SECTION 5: Firefighting measures

#### 5.1 Extinguishing media



##### Suitable extinguishing media

co-ordinate firefighting measures to the fire surroundings  
dry extinguishing powder, D-powder, dry sand

##### Unsuitable extinguishing media

water, carbon dioxide (CO<sub>2</sub>)

#### 5.2 Special hazards arising from the substance or mixture

Product may release hydrogen gas. Increased storage temperatures will accelerate this process. Water-reactive (in contact with water releases flammable gases).

#### 5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Fight fire with normal precautions from a reasonable distance. Wear self-contained breathing apparatus.

## Magnesium turnings $\geq 99,9\%$ , for synthesis

article number: AE61

### SECTION 6: Accidental release measures

#### 6.1 Personal precautions, protective equipment and emergency procedures



##### For non-emergency personnel

Avoid contact with skin, eyes and clothes.

#### 6.2 Environmental precautions

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it.

#### 6.3 Methods and material for containment and cleaning up

##### Advice on how to contain a spill

Covering of drains. Take up mechanically.

##### Advice on how to clean up a spill

Take up mechanically.

##### Other information relating to spills and releases

Place in appropriate containers for disposal.

#### 6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

### SECTION 7: Handling and storage

#### 7.1 Precautions for safe handling

Avoid dust formation.

##### Advice on general occupational hygiene

Wash hands before breaks and after work. Keep away from food, drink and animal feedingstuffs. When using do not smoke.

#### 7.2 Conditions for safe storage, including any incompatibilities

Store in a dry place. Do not allow contact with water.

##### Incompatible substances or mixtures

Do not allow contact with water. Observe hints for combined storage.

##### Evaporative conditions

Keep container tightly closed and in a well-ventilated place.

##### Consideration of other advice:

##### Specific designs for storage rooms or vessels

Recommended storage temperature: 15 – 25 °C

#### 7.3 Specific end use(s)

No information available.

# Safety data sheet

acc. to Safe Work Australia - Code of Practice



## Magnesium turnings $\geq 99,9\%$ , for synthesis

article number: **AE61**

### SECTION 8: Exposure controls/personal protection

#### 8.1 Control parameters

##### National limit values

##### Occupational exposure limit values (Workplace Exposure Limits)

This information is not available.

##### Human health values

Relevant DNELs and other threshold levels				
Endpoint	Threshold level	Protection goal, route of exposure	Used in	Exposure time
DNEL	10 mg/m <sup>3</sup>	human, inhalatory	worker (industry)	chronic - systemic effects

##### Environmental values

Relevant PNECs and other threshold levels				
End-point	Threshold level	Organism	Environmental compartment	Exposure time
PNEC	0.41 mg/l	aquatic organisms	freshwater	short-term (single instance)
PNEC	0.41 mg/l	aquatic organisms	marine water	short-term (single instance)
PNEC	10.8 mg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
PNEC	268 mg/kg	aquatic organisms	freshwater sediment	short-term (single instance)
PNEC	268 mg/kg	aquatic organisms	marine sediment	short-term (single instance)
PNEC	268 mg/kg	terrestrial organisms	soil	short-term (single instance)

#### 8.2 Exposure controls

##### Individual protection measures (personal protective equipment)

##### Eye/face protection



Use safety goggle with side protection.

##### Skin protection



# Safety data sheet

acc. to Safe Work Australia - Code of Practice



## Magnesium turnings $\geq 99,9\%$ , for synthesis

article number: **AE61**

### • hand protection

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves. The times are approximate values from measurements at 22 ° C and permanent contact. Increased temperatures due to heated substances, body heat etc. and a reduction of the effective layer thickness by stretching can lead to a considerable reduction of the breakthrough time. If in doubt, contact manufacturer. At an approx. 1.5 times larger / smaller layer thickness, the respective breakthrough time is doubled / halved. The data apply only to the pure substance. When transferred to substance mixtures, they may only be considered as a guide.

### • type of material

NBR (Nitrile rubber)

### • material thickness

>0,11 mm

### • breakthrough times of the glove material

>480 minutes (permeation: level 6)

### • other protection measures

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended.

### Respiratory protection



Respiratory protection necessary at: Dust formation. Particulate filter device (EN 143). P1 (filters at least 80 % of airborne particles, colour code: White).

### Environmental exposure controls

Keep away from drains, surface and ground water.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

Physical state	solid
Colour	silver grey
Odour	odourless
Melting point/freezing point	650 °C at 1,013 hPa
Boiling point or initial boiling point and boiling range	1,107 °C at 1,013 hPa
Flammability	flammable solid in accordance with GHS criteria substance which, in contact with water, emits flammable gases (in accordance with GHS criteria)
Lower and upper explosion limit	not determined
Flash point	not applicable
Auto-ignition temperature	not determined
Decomposition temperature	not relevant

# Safety data sheet

acc. to Safe Work Australia - Code of Practice



## Magnesium turnings ≥99,9 %, for synthesis

article number: **AE61**

pH (value)	not applicable
Kinematic viscosity	not relevant
<u>Solubility(ies)</u>	
Water solubility	0.007 g/l at 21 °C (ECHA)
<u>Partition coefficient</u>	
Partition coefficient n-octanol/water (log value):	not relevant (inorganic)
Vapour pressure	3.72 hPa at 650 °C
<u>Density and/or relative density</u>	
Density	1.75 g/cm <sup>3</sup> at 20 °C
Relative vapour density	Information on this property is not available.
Bulk density	300 – 400 kg/m <sup>3</sup>
Particle characteristics	No data available.
<u>Other safety parameters</u>	
Oxidising properties	none
<b>9.2 Other information</b>	
Information with regard to physical hazard classes:	There is no additional information.
Other safety characteristics:	There is no additional information.

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

It's a reactive substance. Risk of ignition. Reactivity with water.

#### If heated

Risk of ignition.

### 10.2 Chemical stability

Reactivity if exposed to air. Moisture-sensitive.

### 10.3 Possibility of hazardous reactions

Material reacts vigorously with water emitting flammable gases,

**Violent reaction with:** Alkali (lye), Alcohols, Halogenated hydrocarbons, Oxidizing agent, Acids, Nitrate

### 10.4 Conditions to avoid

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Protect from moisture.

### 10.5 Incompatible materials

water

# Safety data sheet

acc. to Safe Work Australia - Code of Practice



## Magnesium turnings $\geq 99,9\%$ , for synthesis

article number: **AE61**

### Release of flammable materials with

Water

### 10.6 Hazardous decomposition products

Hazardous combustion products: see section 5.

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Classification acc. to GHS

#### Acute toxicity

Shall not be classified as acutely toxic.

GHS of the United Nations, annex 4. May be harmful if swallowed.

Acute toxicity					
Exposure route	Endpoint	Value	Species	Method	Source
oral	LD50	$>2,000$ mg/kg	rat		ECHA

#### Skin corrosion/irritation

Shall not be classified as corrosive/irritant to skin.

#### Serious eye damage/eye irritation

Shall not be classified as seriously damaging to the eye or eye irritant.

#### Respiratory or skin sensitisation

Shall not be classified as a respiratory or skin sensitiser.

#### Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

#### Carcinogenicity

Shall not be classified as carcinogenic.

#### Reproductive toxicity

Shall not be classified as a reproductive toxicant.

#### Specific target organ toxicity - single exposure

Shall not be classified as a specific target organ toxicant (single exposure).

#### Specific target organ toxicity - repeated exposure

Shall not be classified as a specific target organ toxicant (repeated exposure).

#### Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

#### Symptoms related to the physical, chemical and toxicological characteristics

##### • If swallowed

Data are not available.

##### • If in eyes

Data are not available.



# Safety data sheet

acc. to Safe Work Australia - Code of Practice



## Magnesium turnings $\geq 99,9\%$ , for synthesis

article number: **AE61**

- **If inhaled**

Data are not available.

- **If on skin**

Data are not available.

- **Other information**

Health effects are not known.

### 11.2 Endocrine disrupting properties

Does not contain an endocrine disruptor (ED) at a concentration of  $\geq 0,1\%$ .

## SECTION 12: Ecological information

### 12.1 Toxicity

Harmful to aquatic life.

Aquatic toxicity (acute)				
Endpoint	Value	Species	Source	Exposure time
LC50	541 mg/l	fish	ECHA	96 h
ErC50	>12 mg/l	algae	ECHA	72 h

Aquatic toxicity (chronic)				
Endpoint	Value	Species	Source	Exposure time
EC50	125 mg/l	aquatic invertebrates	ECHA	21 d

### 12.2 Persistence and degradability

Data are not available.

### 12.3 Bioaccumulative potential

Data are not available.

### 12.4 Mobility in soil

Data are not available.

### 12.5 Results of PBT and vPvB assessment

Data are not available.

### 12.6 Endocrine disrupting properties

Does not contain an endocrine disruptor (ED) at a concentration of  $\geq 0,1\%$ .

### 12.7 Other adverse effects

Data are not available.

# Safety data sheet

acc. to Safe Work Australia - Code of Practice



## Magnesium turnings $\geq 99,9\%$ , for synthesis

article number: **AE61**

### SECTION 13: Disposal considerations

#### 13.1 Waste treatment methods



This material and its container must be disposed of as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulations.

Recycling/reclamation of metals and metal compounds.

#### Sewage disposal-relevant information

Do not empty into drains.

#### Waste treatment of containers/packagings

Only packagings which are approved (e.g. acc. to the Dangerous Goods Regulations) may be used. Handle contaminated packages in the same way as the substance itself. Completely emptied packages can be recycled.

#### Relevant provisions relating to waste(Basel Convention)

#### Properties of waste which render it hazardous

**H4.1** Flammable solids

#### 13.3 Remarks

Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities. Please consider the relevant national or regional provisions. Non-contaminated packages may be recycled.

### SECTION 14: Transport information

#### 14.1 UN number

<b>UN RTDG</b>	UN 1869
IMDG-Code	UN 1869
ICAO-TI	UN 1869

#### 14.2 UN proper shipping name

<b>UN RTDG</b>	MAGNESIUM
IMDG-Code	MAGNESIUM
ICAO-TI	Magnesium

#### 14.3 Transport hazard class(es)

<b>UN RTDG</b>	4.1
IMDG-Code	4.1
ICAO-TI	4.1

#### 14.4 Packing group

<b>UN RTDG</b>	III
IMDG-Code	III
ICAO-TI	III

# Safety data sheet

acc. to Safe Work Australia - Code of Practice



## Magnesium turnings $\geq 99,9\%$ , for synthesis

article number: **AE61**

**14.5 Environmental hazards** non-environmentally hazardous acc. to the dangerous goods regulations

**14.6 Special precautions for user**  
There is no additional information.

**14.7 Transport in bulk according to IMO instruments**  
The cargo is not intended to be carried in bulk.

### 14.8 Information for each of the UN Model Regulations

#### Transport information National regulations Additional information (UN RTDG)

<b>UN number</b>	1869
<b>Class</b>	4.1
<b>Packing group</b>	III
<b>Danger label(s)</b>	4.1



<b>Special provisions (SP)</b>	59, 920 UN RTDG
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<b>Excepted quantities (EQ)</b>	E1 UN RTDG
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<b>Limited quantities (LQ)</b>	5 kg UN RTDG
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<b>Emergency Action Code</b>	1Z
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#### International Maritime Dangerous Goods Code (IMDG) - Additional information

Proper shipping name	MAGNESIUM
Particulars in the shipper's declaration	UN1869, MAGNESIUM, 4.1, III
Marine pollutant	-
Danger label(s)	4.1



Special provisions (SP)	59, 920
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Excepted quantities (EQ)	E1
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Limited quantities (LQ)	5 kg
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EmS	F-G, S-G
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Stowage category	A
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# Safety data sheet


acc. to Safe Work Australia - Code of Practice



## Magnesium turnings $\geq 99,9\%$ , for synthesis

article number: **AE61**

### International Civil Aviation Organization (ICAO-IATA/DGR) - Additional information

Proper shipping name	Magnesium
Particulars in the shipper's declaration	UN1869, Magnesium, 4.1, III
Danger label(s)	4.1
	
Special provisions (SP)	A15
Excepted quantities (EQ)	E1
Limited quantities (LQ)	10 kg

## SECTION 15: Regulatory information

### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

There is no additional information.

#### National regulations(Australia)

##### Australian Inventory of Chemical Substances(AICS)

Substance is listed.

#### Other information

Directive 94/33/EC on the protection of young people at work. Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

#### National inventories

Country	Inventory	Status
AU	AIIC	substance is listed
CA	DSL	substance is listed
CN	IECSC	substance is listed
EU	ECSI	substance is listed
EU	REACH Reg.	substance is listed
KR	KECI	substance is listed
MX	INSQ	substance is listed
NZ	NZIoC	substance is listed
PH	PICCS	substance is listed
TR	CICR	substance is listed
TW	TCSI	substance is listed
US	TSCA	substance is listed (ACTIVE)
VN	NCI	substance is listed

#### Legend

AIIC	Australian Inventory of Industrial Chemicals
CICR	Chemical Inventory and Control Regulation
DSL	Domestic Substances List (DSL)
ECSI	EC Substance Inventory (EINECS, ELINCS, NLP)
IECSC	Inventory of Existing Chemical Substances Produced or Imported in China
INSQ	National Inventory of Chemical Substances

# Safety data sheet

acc. to Safe Work Australia - Code of Practice



## Magnesium turnings $\geq 99,9$ %, for synthesis

article number: **AE61**

### Legend

KECI	Korea Existing Chemicals Inventory
NCI	National Chemical Inventory
NZIoC	New Zealand Inventory of Chemicals
PICCS	Philippine Inventory of Chemicals and Chemical Substances (PICCS)
REACH Reg.	REACH registered substances
TCSI	Taiwan Chemical Substance Inventory
TSCA	Toxic Substance Control Act

## 15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this substance.

## SECTION 16: Other information

### Indication of changes (revised safety data sheet)

Section	Former entry (text/value)	Actual entry (text/value)	Safety-relevant
2.3		Endocrine disrupting properties: Does not contain an endocrine disruptor (ED) at a concentration of $\geq 0,1\%$ .	yes
14.8		Emergency Action Code: 1Z	yes
15.1		National inventories: change in the listing (table)	yes

### Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
DGR	Dangerous Goods Regulations (see IATA/DGR)
DNEL	Derived No-Effect Level
EC50	Effective Concentration 50 %. The EC50 corresponds to the concentration of a tested substance causing 50 % changes in response (e.g. on growth) during a specified time interval
ED	Endocrine disruptor
EINECS	European Inventory of Existing Commercial Chemical Substances
ELINCS	European List of Notified Chemical Substances
EmS	Emergency Schedule
ErC50	$\equiv$ EC50: in this method, that concentration of test substance which results in a 50 % reduction in either growth (EbC50) or growth rate (ErC50) relative to the control
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
IATA	International Air Transport Association
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)
ICAO	International Civil Aviation Organization
ICAO-TI	Technical instructions for the safe transport of dangerous goods by air
IMDG	International Maritime Dangerous Goods Code
IMDG-Code	International Maritime Dangerous Goods Code

# Safety data sheet

acc. to Safe Work Australia - Code of Practice



## Magnesium turnings $\geq 99,9$ %, for synthesis

article number: **AE61**

Abbr.	Descriptions of used abbreviations
LC50	Lethal Concentration 50%: the LC50 corresponds to the concentration of a tested substance causing 50 % lethality during a specified time interval
LD50	Lethal Dose 50 %: the LD50 corresponds to the dose of a tested substance causing 50 % lethality during a specified time interval
NLP	No-Longer Polymer
PBT	Persistent, Bioaccumulative and Toxic
PNEC	Predicted No-Effect Concentration
UN RTDG	UN Recommendations on the Transport of Dangerous Good
vPvB	Very Persistent and very Bioaccumulative

### Key literature references and sources for data

Safe Work Australia's Code of Practice for Labelling of Workplace Hazardous Chemicals (under WHS Regulations).

UN Recommendations on the Transport of Dangerous Good. International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).

### List of relevant phrases (code and full text as stated in section 2 and 3)

Code	Text
H228	Flammable solid.
H261	In contact with water releases flammable gases.

### Disclaimer

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.