Material Safety Data Sheet
According to OSHA and ANSI

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

Product name identifier:
Product name: Magnesium turnings

Stock number: L08120
CAS Number: 7439-95-4
EINECS Number: 231-104-6
Index number: 012-002-00-9

Relevant identified uses of the substance or mixture and uses advised against.
Sector of Use: SU24 Scientific research and development

Details of the supplier of the safety data sheet
Manufacturer/Supplier:
Alfa Aesar, A Johnson Matthey Company
Johnson Matthey Catalog Company, Inc.
30 Bond Street
Ward Hill, MA 01835-8099
Tel: 800-343-0660
Fax: 800-322-4757
Email: tech@alfa.com
www.alfa.com

Emergency telephone number:
During normal hours the Health, Safety and Environmental Department at (800) 343-0660. After normal hours call Carechem 24 at (866) 928-0789.

2 Hazards identification

Classification of the substance or mixture

GHS02 Flame

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

Classification according to Directive 67/548/EEC or Directive 1999/45/EC
F; Highly flammable

R11-15: Highly flammable. Contact with water liberates extremely flammable gases.

Label elements

Labelling according to EU guidelines:

Code letter and hazard designation of product:
F Highly flammable

Risk phrases:
11 Highly flammable.
15 Contact with water liberates extremely flammable gases.

Safety phrases:
7/8 Keep container tightly closed and dry.
43 In case of fire, use powdered extinguishing agent. Never use water.

Hazard description:

WHMIS classification
B4 - Flammable solid
B6 - Reactive flammable material

Classification system

HMIS ratings (scale 0-4)
(Hazardous Materials Identification System)

<table>
<thead>
<tr>
<th>HEALTH</th>
<th>1</th>
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<tbody>
<tr>
<td>FIRE</td>
<td>2</td>
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<tr>
<td>REACTIVITY</td>
<td>2</td>
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</tbody>
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Health (acute effects) = 1
Flammability = 2
Reactivity = 2

(Contd. on page 2)
Product name: Magnesium turnings

Other hazards

Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

3 Composition/information on ingredients

Chemical characterization: Substances

(CAS#) Description:
Magnesium (CAS# 7439-95-4)

Identification number(s):
EINECS Number: 231-104-6

Index number: 012-002-00-9

4 First aid measures

Description of first aid measures

After inhalation
Supply fresh air. If required, provide artificial respiration. Keep patient warm. Seek immediate medical advice.

After skin contact
Immediately 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 a doctor.

After swallowing
Seek immediate medical advice.

5 Firefighting measures

Extinguishing media

Suitable extinguishing agents: Special powder for metal fires. Do not use water.

For safety reasons unsuitable extinguishing agents: Water.

Special hazards arising from the substance or mixture:
In case of fire, the following can be released:
Metal oxide fume.

Advice for firefighters

Protective equipment:
Wear self-contained respirator.

Wear fully protective impervious suit.

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation.

Keep away from ignition sources.

Environmental precautions:
Do not allow material to be released to the environment without proper governmental permits.

Methods and material for containment and cleaning up:

Ensure adequate ventilation.

Do not flush with water or aqueous cleansing agents.

Keep away from ignition sources.

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 disposal information.

7 Handling and storage

Handling

Precautions for safe handling:

Handle under dry protective gas.

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

Ensure good ventilation at the workplace.

Information about protection against explosions and fires:

Keep ignition sources away.

Protect against electrostatic charges.
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.

Control parameters
Components with limit values that require monitoring at the workplace: Not required.
Additional information: No data

Exposure controls
Personal protective equipment
General protective and hygienic measures
The usual precautionary measures for handling chemicals should be followed.
Keep away from foodstuffs, beverages and feed.
Remove all soiled and contaminated clothing immediately.
Wash hands before breaks and at the end of work.

Breathing equipment: Use suitable respirator when high concentrations are present.
Protection of hands:
Impervious gloves
Check protective gloves prior to each use for their proper condition.

Material of gloves
The selection of suitable gloves not only depends on the material, but also on quality.

Eye protection:
Safety glasses
Full face protection

Body protection: Protective work clothing.

9 Physical and chemical properties

Information on basic physical and chemical properties

General Information
Appearance:
Form: Solid in various forms
Color: Silver-colored
Odor: Odorless
Odour threshold: Not determined.

pH-value: Not applicable.

Change in condition
Melting point/Melting range: 650°C (1202 °F)
Boiling point/Boiling range: 1107°C (2025 °F)
Sublimation temperature / start: Not determined

Flammability (solid, gaseous) Highly flammable.
Contact with water liberates extremely flammable gases.

Ignition temperature: Not determined
Decomposition temperature: Not determined
Auto igniting: Not determined.

Explosion limits:
Lower: Not determined
Upper: Not determined

Vapor pressure at 621°C (1150 °F): 1.33 hPa (1 mm Hg)
10 Stability and reactivity

Reactivity
Chemical stability
Thermal decomposition / conditions to be avoided:
Decomposition will not occur if used and stored according to specifications.
Possibility of hazardous reactions Contact with water releases flammable gases
Incompatible materials:
Water/moisture
Oxidizing agents
Hazardous decomposition products: Metal oxide fume

11 Toxicological information

Information on toxicological effects
Acute toxicity:
Primary irritant effect:
on the skin: May cause irritation
on the eye: May cause irritation
Sensitization: No sensitizing effects known.
Subacute to chronic toxicity:
Inhalation of magnesium compounds may cause metal fume fever. Metallic magnesium which
perforates the skin may cause local lesions. Some magnesium salts have produced muscle
weakness, cardiac arrhythmias, respiratory effects and changes in blood chemistry following
ingestion.
Additional toxicological information:
To the best of our knowledge the acute and chronic toxicity of this substance is not fully
known.
No classification data on carcinogenic properties of this material is available from the EPA,
IARC, NTP, OSHA or ACGIH.

12 Ecological information

Toxicity
Acquatic toxicity: No further relevant information available.
Persistence and degradability No further relevant information available.
Behavior in environmental systems:
Bioaccumulative potential No further relevant information available.
Mobility in soil No further relevant information available.
Additional ecological information:
General notes:
Do not allow undiluted product or large quantities of it to reach ground water, water course
or sewage system.
Do not allow material to be released to the environment without proper governmental permits.
Results of PBT and vPvB assessment
PBT: Not applicable.
vPvB: Not applicable.
Other adverse effects No further relevant information available.
### 14 Transport information

**DOT regulations:**

| Hazard class: | 4.1 |
| Identification number: | UN1869 |
| Packing group: | III |
| Proper shipping name (technical name): | MAGNESIUM |
| Label | 4.1 |

**Land transport ADR/RID (cross-border)**

| ADR/RID class: | 4.1 (F3) Flammable solids, self-reactive substances and solid desensitised explosives |
| Danger code (Kemler): | 40 |
| UN-Number: | 1869 |
| Packaging group: | III |
| UN proper shipping name: | 1869 MAGNESIUM |

**Maritime transport IMDG:**

| IMDG Class: | 4.1 |
| UN Number: | 1869 |
| Label | 4.1 |
| Packaging group: | III |
| Marine pollutant: | No |
| Proper shipping name: | MAGNESIUM |

**Air transport ICAO-TI and IATA-DGR:**

| ICAO/IATA Class: | 4.1 |
| UN/ID Number: | 1869 |
| Label | 4.1 |
| Packaging group: | III |
| Proper shipping name: | MAGNESIUM |

**UN "Model Regulation":** UN1869, MAGNESIUM, 4.1, III

**Special precautions for user**

| Warning: Flammable solids, self-reactive substances and solid desensitised explosives |

**Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** Not applicable.

### 15 Regulatory information

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

**Product related hazard informations:**

**Hazard symbols:**

| F Highly flammable |

**Risk phrases:**

| 11 Highly flammable. |
15 Contact with water liberates extremely flammable gases.

**Safety phrases:**
7/8 Keep container tightly closed and dry.
43 In case of fire, use powdered extinguishing agent. Never use water.

**National regulations**
All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.
All components of this product are listed on the Canadian Domestic Substances List (DSL).

**Information about limitation of use:** For use only by technically qualified individuals.

**Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

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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 MSDS:** Health, Safety and Environmental Department.

**Contact:**
Zachariah C. Holt
Global EHS Manager

**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)
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
IATA-DSG: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
ICAO: International Civil Aviation Organization
ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
WHMIS: Workplace Hazardous Materials Information System (Canada)