SAFETY DATA SHEET

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

1.1 Product identifiers

Product name: Magnesium chloride
Product Number: 208337
Brand: Aldrich
CAS-No.: 7786-30-3

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

Identified uses: Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

Company: Sigma-Aldrich Inc.
3050 SPRUCE ST
ST. LOUIS MO 63103
UNITED STATES
Telephone: +1 314 771-5765
Fax: +1 800 325-5052

1.4 Emergency telephone

Emergency Phone #: 800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Not a hazardous substance or mixture.

2.2 GHS Label elements, including precautionary statements

Not a hazardous substance or mixture.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

SECTION 3: Composition/information on ingredients

3.1 Substances

Formula: Cl₂Mg
Molecular weight: 95.21 g/mol
CAS-No.: 7786-30-3
No components need to be disclosed according to the applicable regulations.

SECTION 4: First aid measures

4.1 Description of first-aid measures

If inhaled
After inhalation: fresh air.

In case of skin contact
In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/shower.

In case of eye contact
After eye contact: rinse out with plenty of water. Remove contact lenses.

If swallowed
After swallowing: make victim drink water (two glasses at most). Consult doctor if feeling unwell.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media
For this substance/mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture
Hydrogen chloride gas
Magnesium oxide
Not combustible.
Ambient fire may liberate hazardous vapours.

5.3 Advice for firefighters
In the event of fire, wear self-contained breathing apparatus.

5.4 Further information
Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.
SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Advice for non-emergency personnel: Avoid inhalation of dusts. Evacuate the danger area, observe emergency procedures, consult an expert. For personal protection see section 8.

6.2 Environmental precautions
Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up
Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

6.4 Reference to other sections
For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Storage conditions
Tightly closed. Dry.

Storage class
Storage class (TRGS 510): 13: Non Combustible Solids

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8: Exposure controls/personal protection

8.1 Control parameters
Ingredients with workplace control parameters
Contains no substances with occupational exposure limit values.

8.2 Exposure controls
Appropriate engineering controls
Change contaminated clothing. Wash hands after working with substance.

Personal protective equipment

Eye/face protection
Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses

Skin protection
This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please
contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested: KCL 741 Dermatril® L

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested: KCL 741 Dermatril® L

Respiratory protection required when dusts are generated.
Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

Control of environmental exposure
Do not let product enter drains.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

a) Appearance
   Form: powder
   Color: white

b) Odor
   odorless

c) Odor Threshold
   No data available

d) pH
   No data available

e) Melting point/freezing point
   Melting point/range: 714 °C (1317 °F)

f) Initial boiling point and boiling range
   1,412 °C 2,574 °F

g) Flash point
   ()Not applicable

h) Evaporation rate
   No data available

i) Flammability (solid, gas)
   The product is not flammable.

j) Upper/lower flammability or explosive limits
   No data available

k) Vapor pressure
   No data available

l) Vapor density
   No data available
m) Density 2.32 g/mL at 25 °C (77 °F)
   Relative density No data available
n) Water solubility 468.7 g/l at 20 °C (68 °F) - soluble
o) Partition coefficient: n-octanol/water No data available
q) Decomposition temperature No data available
r) Viscosity No data available
s) Explosive properties No data available
t) Oxidizing properties none

9.2 Other safety information
No data available

SECTION 10: Stability and reactivity

10.1 Reactivity
No data available

10.2 Chemical stability
The product is chemically stable under standard ambient conditions (room temperature).

10.3 Possibility of hazardous reactions
Violent reactions possible with:
acids

10.4 Conditions to avoid
When mixed with limited amount of water enough heat may be generated to cause frothing. Exposure to moisture.
no information available

10.5 Incompatible materials
No data available

10.6 Hazardous decomposition products
In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - female - > 5,000 mg/kg (OECD Test Guideline 423)
Inhalation: No data available
LD50 Dermal - Rat - male and female - > 2,000 mg/kg (OECD Test Guideline 402)
No data available
Skin corrosion/irritation
Skin - In vitro study
Result: No skin irritation - 15 min  
(Human Skin Model Test)
Remarks: (for the hexahydrate)
The value is given in analogy to the following substances: Magnesium chloride hexahydrate

Serious eye damage/eye irritation
Eyes - Rabbit
Result: No eye irritation - 72 h  
(OECD Test Guideline 405)
Remarks: (for the hexahydrate)

Respiratory or skin sensitization
Maximization Test - Guinea pig
Result: negative  
(OECD Test Guideline 406)

Germ cell mutagenicity
Test Type: Human
Test system: lymphocyte
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: negative

Carcinogenicity
IARC: No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
NTP: No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

Reproductive toxicity
No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

11.2 Additional Information
Repeated dose toxicity - Rat - male and female - Oral - NOAEL (No observed adverse effect level) - > 1,000 mg/kg

RTECS: OM2800000
Central nervous system depression, Vomiting, Diarrhea, Abdominal pain, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.
Stomach - Irregularities - Based on Human Evidence
SECTION 12: Ecological information

12.1 Toxicity

Toxicity to fish

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Substance</th>
<th>LC50</th>
<th>Duration</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>static test</td>
<td>Pimephales promelas (fathead minnow)</td>
<td>2,119.3 mg/l</td>
<td>96 h</td>
<td>(US-EPA)</td>
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Toxicity to daphnia and other aquatic invertebrates

<table>
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<th>Test Type</th>
<th>Substance</th>
<th>LC50</th>
<th>Duration</th>
<th>Source</th>
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</thead>
<tbody>
<tr>
<td>static test</td>
<td>Daphnia magna (Water flea)</td>
<td>548.4 mg/l</td>
<td>48 h</td>
<td>(ECHA)</td>
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Remarks:

Toxicity to algae

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Substance</th>
<th>EC50</th>
<th>Duration</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Growth rate</td>
<td>Desmodesmus subspicatus (green algae)</td>
<td>&gt; 100 mg/l</td>
<td>72 h</td>
<td>(OECD Test Guideline 201)</td>
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</table>

Toxicity to bacteria

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Substance</th>
<th>EC50</th>
<th>Duration</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>static test</td>
<td>activated sludge</td>
<td>&gt; 900 mg/l</td>
<td>3 h</td>
<td>(OECD Test Guideline 209)</td>
</tr>
</tbody>
</table>

12.2 Persistence and degradability

The methods for determining the biological degradability are not applicable to inorganic substances.

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

**Product**

Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself. See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

SECTION 14: Transport information

**DOT (US)**

Not dangerous goods

**IMDG**
Not dangerous goods

**IATA**
Not dangerous goods

**Further information**
Not classified as dangerous in the meaning of transport regulations.

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**SECTION 15: Regulatory information**

**SARA 302 Components**
This material does not contain any components with a section 302 EHS TPQ.

**SARA 313 Components**
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**SARA 311/312 Hazards**
Chronic Health Hazard

**Massachusetts Right To Know Components**
No components are subject to the Massachusetts Right to Know Act.

No components are subject to the Massachusetts Right to Know Act.

**Pennsylvania Right To Know Components**
magnesium chloride

<table>
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<tr>
<th>CAS-No.</th>
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**New Jersey Right To Know Components**
magnesium chloride

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**SECTION 16: Other information**

**Further information**
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

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