



# Safety Data Sheet

## Magnesium Perchlorate

Version: 2.1  
Revision date:  
07/26/2018  
Supersedes:  
03/21/2017

### 1. PRODUCT AND COMPANY IDENTIFICATION

#### 1.1. Product Identifiers

**Product Form:** Solid

**Substance Name:** Magnesium Perchlorate

**CAS No.:** 10034-81-8

**Product Code:** UIC, Inc. Catalog Number CM300-044

**Recommended use:** professional, scientific and technical activities: other professional, scientific and technical activities

**Recommended restrictions:** None known.

#### 1.2. Intended Use of the Product

**Use of the substance/mixture:**

**Name, Address, and Telephone of the Responsible Party**

UIC Inc

16720 Cherry Creek Court

Joliet, IL 60433

Phone: (815) 744-4477

Fax: (815) 744-1561

**Emergency Telephone Number**

For Chemical Emergency, Spill, Leak, Fire, Exposure, or Accident, call emergency number: 1-815-474-8753

### 2. Hazards Identification of the product

#### 2.1. Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Oxidizing solids (Category 2), H272

Skin irritation (Category 2), H315

Eye irritation (Category 2A), H319

Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335

For the full text of the H-Statements mentioned in this Section, see Section 16.

#### 2.2. GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statement(s)

H272 May intensify fire; oxidiser.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

Precautionary statement(s)

P210 Keep away from heat.

P220 Keep/Store away from clothing/ combustible materials.

P221 Take any precaution to avoid mixing with combustibles.

P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.

P264 Wash skin thoroughly after handling.

P271 Use only outdoors or in a well-ventilated area.

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.  
 P302 + P352 IF ON SKIN: Wash with plenty of soap and water.  
 P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
 P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 P312 Call a POISON CENTER or doctor/ physician if you feel unwell.  
 P321 Specific treatment (see supplemental first aid instructions on this label).  
 P332 + P313 If skin irritation occurs: Get medical advice/ attention.  
 P337 + P313 If eye irritation persists: Get medical advice/ attention.  
 P362 Take off contaminated clothing and wash before reuse.  
 P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.  
 P403 + P233 Store in a well-ventilated place. Keep container tightly closed.  
 P405 Store locked up.  
 P501 Dispose of contents/ container to an approved waste disposal plant.

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

**3. Composition/information on ingredients**

**3.1. Substances**

Synonyms: Perchloric acid, magnesium salt; Anhydrone®; Dehydrire; Magnesium perchlorate, desiccant  
 Formula:  $Mg(ClO_4)_2$   
 Molecular weight: 223.206 g/mol  
 CAS-No.: 10034-81-8  
 EC-No.: 233-108-3

**Hazardous components**

Component	Classification	Concentration
Magnesium Perchlorate	Ox. Sol. 2; Skin Irrit. 2; Eye Irrit. 2A; STOT SE 3; H272, H315, H319, H335	90 - 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

**4. First Aid Measures**

**4.1. Description of first aid measures**

**General advice**

Move out of dangerous area. Consult a physician. Show this safety data sheet to the doctor in attendance.

**If inhaled**

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

**In case of skin contact**

Wash off with soap and plenty of water. Consult a physician.

**In case of eye contact**

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

**If swallowed**

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

**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

**5. Fire Fighting Measures**

**5.1. Extinguishing media**

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

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

Hydrogen chloride gas, Magnesium oxide. Greatly increases the burning rate of combustible materials. Containers may explode when heated.  
During fire, gases hazardous to health may be formed.

## **5.3. Advice for firefighters**

Wear self-contained breathing apparatus for firefighting if necessary.  
firefighters

## **5.4. Firefighting equipment/instructions**

In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do it without risk. Move containers from fire area if you can do so without risk.

## **5.4. Further information**

Use water spray to cool unopened containers.

## **5.5. General fire hazards**

May intensify fire; oxidizer. Contact with combustible material may cause fire.

## **6. Accidental Release Measures**

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

Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep away from clothing and other combustible materials. Wear appropriate protective equipment and clothing during clean-up. Avoid inhalation of dust. Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

### **6.2. Environmental precautions**

Do not let product enter drains.

### **6.3. Methods and materials for containment and cleaning up**

Dilute with plenty of water. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. Ventilate the contaminated area. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Minimize dust generation and accumulation. If sweeping of a contaminated area is necessary, use a dust suppressant agent which does not react with the product. Collect dust using a vacuum cleaner equipped with HEPA filter. Wear appropriate protective equipment and clothing during clean-up. This product is miscible in water. Stop the flow of material, if this is without risk.

Large Spills: Wet down with water and dike for later disposal. Shovel the material into waste container. Following product recovery, flush area with water.

Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use.

### **6.4. Reference to other sections**

For disposal see section 13.

## **7. Handling and Storage**

### **7.1. Precautions for safe handling**

Minimize dust generation and accumulation. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Keep away from heat. Provide appropriate exhaust ventilation at places where dust is formed. Take any precaution to avoid mixing with combustibles. Keep away from clothing and other combustible materials. Avoid breathing dust. Avoid contact with eyes. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

For precautions see section 2.2.

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

Store locked up. Do not store around flammable or combustible materials. Keep away from heat. Store in a cool, dry place out of direct sunlight. Store in original tightly closed container. Store in a well-ventilated place. Do not store near combustible materials. Store away from incompatible materials (see Section 10 of the SDS).

### **7.3. Specific end use(s)**

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

## 8. Exposure Controls and Personal Protection

### 8.1. Control Parameters

#### Components with workplace control parameters

This substance has no PEL, TLV, or other recommended exposure limit.

### 8.2. Exposure Controls

#### Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. If material is ground, cut, or used in any operation which may generate dusts, use appropriate local exhaust ventilation to keep exposures below the recommended exposure limits. Provide eyewash station. An eye wash and safety shower must be available in the immediate work area.

#### Personal protective equipment

##### Eye/face protection

Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

##### Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

##### Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

##### Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

##### Body Protection

Impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

##### Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

##### General hygiene considerations

Keep from contact with clothing and other combustible materials. Remove and wash contaminated clothing promptly. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

##### Control of environmental exposure

Do not let product enter drains.

## 9. Physical and Chemical Properties

### 9.1. Information on basic physical and chemical properties

a) Appearance	Form: solid, White granular powder. Hygroscopic.
b) Odor	Odorless
c) Odor Threshold	No data available
d) pH	5 - 8 (5% aqueous solution)
e) Melting point/freezing point	Melting point/range: 250 °C (482 °F)
f) Initial boiling point and boiling range	No data available
g) Flash point	Not applicable
h) Evaporation rate	No data available
i) Flammability (solid, gas)	No data available
j) Upper/lower flammability or explosive limits	No data available
k) Vapor pressure	No data available
l) Vapor density	7.7 (air=1)
m) Specific gravity	2.2
n) Relative density	2.210 g/cm <sup>3</sup>
o) Water solubility	99 gm/100 gm in water
p) Partition coefficient: n-octanol/water	No data available
q) Auto-ignition temperature	No data available
r) Decomposition temperature	No data available
s) Viscosity	No data available
t) Explosive properties	Not explosive
u) Oxidizing properties	The substance or mixture is classified as oxidizing with the category 2

### 9.2. Other safety information

No data available

## 10. Stability and Reactivity

### 10.1. Reactivity

Greatly increases the burning rate of combustible materials.

### 10.2. Chemical stability

Stable under recommended storage conditions.

### 10.3. Possibility of hazardous reactions

Hazardous polymerization does not occur.

### 10.4. Conditions to avoid

Heat. Contact with incompatible materials. Drying of this product on clothing or combustible materials may cause fire.

### 10.5. Incompatible materials

Strong acids. Combustible material. Reducing agents. Organic materials Exothermic reaction on contact with water will release heat and steam.

### 10.6. Hazardous decomposition products

Hydrogen chloride.

In the event of fire: see section 5

## 11. Toxicological Information

### 11.1. Information on likely routes of exposure

#### Acute toxicity

Dermal: no data available

LD50 Intraperitoneal - mouse - 1,500 mg/kg

#### Inhalation

Dust may irritate respiratory system.

<b>Skin contact</b>	Dust or powder may irritate the skin.
<b>Eye contact</b>	Causes serious eye irritation.
<b>Ingestion</b>	Expected to be a low ingestion hazard.
<b>Symptoms related to the physical, chemical and toxicological characteristics</b>	Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Dusts may irritate the respiratory tract, skin and eyes.

#### 11.2. Information on toxicological effects

<b>Acute toxicity</b>	Not known.
<b>Skin corrosion/irritation</b>	Prolonged skin contact may cause temporary irritation.
<b>Serious eye damage/eye irritation</b>	Causes serious eye irritation.

#### 11.3. Respiratory or skin sensitization

<b>Respiratory sensitization</b>	Not a respiratory sensitizer.
<b>Skin sensitization</b>	This product is not expected to cause skin sensitization.

#### 11.4. Germ cell mutagenicity

No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

#### 11.5. Carcinogenicity

IARC:	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP:	No component 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 identified as a carcinogen or potential carcinogen by OSHA.

<b>Reproductive toxicity</b>	This product is not expected to cause reproductive or developmental effects.
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<b>Specific target organ toxicity - single exposure</b>	May cause respiratory irritation.
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<b>Specific target organ toxicity repeated exposure</b>	The perchlorate ion competes with iodide in the mechanism that governs uptake into the thyroid gland for growth hormone production. This effect is routinely countered by ensuring sufficient dietary intake of iodine, as perchlorate does not accumulate in the body. Studies on workers in plants where perchlorates are manufactured have shown no thyroid abnormalities; various clinical studies are ongoing. Perchlorates occur naturally in trace amounts in the environment, and are not classified as carcinogenic.
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<b>Aspiration hazard</b>	Not an aspiration hazard.
<b>Further information</b>	This product has no known adverse effect on human health.

## 12. Ecological Information

### 12.1. Toxicity

This material is not expected to be harmful to aquatic life.

### 12.2. Persistence and degradability

No data available

### 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 other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

## 13. Disposal Considerations

### 13.1. Waste treatment methods

#### Disposal instructions

Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations. Dilute waste in large quantities of water and flush into sewer connected to wastewater treatment system in compliance with applicable laws and regulations.

#### Local disposal regulations

Dispose in accordance with all applicable regulations.

#### Hazardous waste code

The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

#### Waste from residues/unused products

Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions). Not applicable.

#### Contaminated packaging

Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal. Offer rinsed packaging material to local recycling facilities. Dispose of as unused product.

## 14. Transport Information

#### DOT (US)

UN number: UN1475                      Class: 5.1                      Packing group: II

Proper shipping name: Magnesium perchlorate

Reportable Quantity (RQ):

Marine pollutant: No

Poison Inhalation Hazard: No

#### IMDG

UN number: UN1475                      Class: 5.1                      Packing group: II

Proper shipping name: MAGNESIUM PERCHLORATE

Marine pollutant: No

#### IATA

UN number: UN1475                      Class: 5.1                      Packing group: II

Proper shipping name: Magnesium perchlorate

Transport in bulk per                      Not applicable.  
Annex II of MARPOL 73/78

and the IBC Code



EMS-No: F-H, S-Q



## 15. Regulatory Information

#### US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

#### SARA 302 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

#### SARA 313 Components

SARA 313: 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

Reactivity Hazard, Acute Health Hazard

#### Massachusetts Right to Know Components

CAS-No.

Revision Date

Magnesium Perchlorate 10034-81-8 1993-04-24

**Pennsylvania Right to Know Components**

	CAS-No.	Revision Date
Magnesium Perchlorate	10034-81-8	1993-04-24

**New Jersey Right to Know Components**

	CAS-No.	Revision Date
Magnesium Perchlorate	10034-81-8	1993-04-24

**California Prop. 65 Components**

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

**16. Other Information**

**Full text of H-Statements referred to under sections 2 and 3.**

Eye Irrit. Eye irritation  
H272 May intensify fire; oxidiser.  
H315 Causes skin irritation.  
H319 Causes serious eye irritation.  
H335 May cause respiratory irritation.  
Ox. Sol. Oxidizing solids  
Skin Irrit. Skin irritation  
STOT SE Specific target organ toxicity - single exposure

**HMIS Rating**

Health hazard: 2  
Chronic Health Hazard:  
Flammability: 0  
Physical Hazard: 2

**NFPA Rating**

Health hazard: 2  
Fire Hazard: 0  
Reactivity Hazard: 2  
Special hazard I: OX

**Further information**

UIC, Inc. has obtained the most current chemical information available to us in updating this Safety Data Sheet. However, users should always use caution when working with chemicals, as UIC, Inc. assumes no liability resulting from its use. Additionally, we make no warranty with respect to any information published on this sheet, either stated or implied.

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