



## SECTION 1: IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

### Product identifier

Trade name: Magnesium sulfate heptahydrate, monohydrate  
Synonym(s): None.  
Preparation/Revision date: May 28, 2015

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

Identified uses: Client to insert  
Uses advised against: None known

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

#### Manufacturer / Supplier

Company name: Peñoles Metals & Chemicals, Inc.  
Address: 2 Stamford Plz  
Stamford, CT 06901  
Customer service: (203) 359-6775

**Emergency telephone number** For Hazardous Materials Incident Spill, Leak, Fire, Exposure, or Accident  
Call CHEMTREC Day or Night  
Within USA and Canada: 1-800-424-9300  
Outside USA and Canada: +1 703-527-3887 (collect calls accepted)

## SECTION 2: HAZARDS IDENTIFICATION

### Classification of the substance or mixture

This product has been assessed and/or tested for its physical, health and environmental hazards and the following classifications apply.

#### Classification according to the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Classification: Combustible dust



## SECTION 2: HAZARDS IDENTIFICATION (CONT'D)

### Label elements

Hazard pictogram:	None.
Signal word:	Warning!
Hazard statements:	May form combustible dust concentrations in air.
Precautionary statements:	None
- Prevention:	None
- Response:	None
- Storage:	None
- Disposal:	None

**Other Hazards** None

### Hazard summary

Physical hazards:	May form combustible dust concentrations in air during processing.
Health hazards:	In bulk and granular form, this product is not considered a health hazard. Powder or dust may cause mechanical irritation of the skin, eyes, respiratory tract and digestive tract. Can cause abdominal pain, vomiting and diarrhea and hypocalcemia.
Environmental hazards:	None
Main symptoms:	May cause skin, eye, respiratory tract and digestive tract irritation. Can cause abdominal pain, vomiting and diarrhea and hypocalcemia.

## SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	CAS Number	%
Magnesium Sulfate	10034-99-8	98
Magnesium Chloride	7786-30-3	<2.0



## SECTION 4: FIRST AID MEASURES

### **General Information**

Show this Safety Data Sheet to the medical professional in attendance. If symptoms occur, follow first aid measures as appropriate.

### **Description of first aid measures**

#### Inhalation:

Inhaled dust can cause coughing. Remove victim to fresh air. If breathing is difficult give oxygen. If breathing has stopped, administer artificial respiration. Get medical attention.

#### Skin contact:

Wash skin with soap and water. If skin becomes irritated, seek medical attention.

#### Eye contact:

Dust can be irritating to the eyes. Hold eyelids open and flush with water for 15 minutes. Get medical attention.

#### Ingestion:

DO NOT INDUCE VOMITING unless directed to do so by a medical professional! Give water or milk to conscious victims. Seek medical attention.

#### Notes to Physician:

Not specified

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

May cause skin, eye, respiratory tract and digestive tract irritation. Can cause abdominal pain, vomiting and diarrhea and hypocalcemia.

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

If any adverse reaction or discomfort continues from any of the above exposures, seek professional medical advice.

## SECTION 5: FIRE FIGHTING MEASURES

### **Extinguishing Media**

#### Suitable extinguishing media:

Use agents appropriate for the material burning.

#### Unsuitable extinguishing media:

None

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

Finely divided powder or dust can be a fire and explosion hazard when exposed to high temperatures or ignition sources. Particle size and dispersion in air determine reactivity. When heated to decomposition, may product metal oxides or fumes.



## SECTION 5: FIRE FIGHTING MEASURES (CONT'D)

### Advice for firefighters

Special protective equipment for firefighters:	Expect the production of magnesium oxide and sulfur oxides in fire conditions. Use self-contained breathing apparatus.
Special firefighting procedures:	None

## SECTION 6: ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

For non-emergency personnel:	Use personal protective equipment as recommended in Section 8. Dust Deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Non-sparking tools should be used. Ensure adequate ventilation. Avoid breathing dust.
For emergency responders:	Not relevant

<b>Environmental Precautions</b>	Do not wash materials down drains.
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Methods and materials for containing and cleaning up	Minimize dust production and contain the spilled material.
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<b>Reference to other Sections</b>	Use personal protective equipment as recommended in Section 8. Dispose of in accordance with Section 13.
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## SECTION 7: HANDLING AND STORAGE

**Precautions for safe handling** Minimize dust generation and accumulation. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations. Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres.

**Conditions for safe storage, including any incompatibilities** No special precautions are necessary.

## SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

### United States. Occupational Exposure Limits:

Component	CAS No.	Type	Value	Form
Magnesium Sulfate	10034-99-8	N/A	N/A	N/A
Magnesium Chloride	7786-30-3	N/A	N/A	N/A
Particulates not otherwise regulated	-	OSHA PEL – TWA	15 mg/m <sup>3</sup>	Total Dust
		OSHA PEL – TWA	5 mg/m <sup>3</sup>	Respirable Dust

### Consult local authorities for acceptable exposure limits

#### Exposure Controls

**Appropriate engineering controls:** It is recommended that all dust control equipment such as local exhaust ventilation and material transport systems involved in handling of this product contain explosion relief vents or an explosion suppression system or an oxygen-deficient environment. Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment).

**Eye/face protection:** Where dusts or fumes exist, goggles should be worn.

**Skin protection:** Bulk material should be handled with cotton or leather gloves.

**Respiratory protection:** NIOSH/MSHA approved respirator. Selection of the respiratory protection equipment depends on the concentration and form of magnesium sulfate present. Each workplace where exposure potentials exist must be evaluated to determine the selection of respiratory protection.

**SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION (CONT'D)**

Thermal hazards: None

**Hygiene measures**

Practice good housekeeping and personal hygiene procedures. No tobacco, smoking, or food in the work area. Wash thoroughly before leaving the work area, eating, drinking, applying cosmetics or smoking. Avoid ingestion or inhalation. Do not use compressed air for blowing dust off clothing.

**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES****Information on basic physical and chemical properties**

<b>Form</b>	Solid	<b>Explosive properties</b>	Not applicable
<b>Color</b>	Transparent crystals or white powder	<b>Explosive limit</b>	Not applicable
<b>Odor</b>	None	<b>Vapor pressure</b>	Not applicable
<b>Odor threshold</b>	Not available	<b>Vapor density</b>	Not applicable
<b>pH</b>	6.5	<b>Evaporation rate</b>	Not applicable
<b>Melting/freezing point</b>	1124 deg C (2055 deg F)	<b>Relative density</b>	2.66 (Water=1)
<b>Boiling point, initial boiling point and boiling range</b>	Not available	<b>Partition coefficient (n-octanol/water)</b>	Not applicable
<b>Flash point</b>	Not applicable	<b>Solubility (water)</b>	>90%
<b>Auto-ignition temperature</b>	Not applicable	<b>Decomposition temperature</b>	Not applicable
<b>Flammability (solid, gas)</b>	Not available	<b>Bulk density</b>	Not applicable
<b>Flammability limit-lower%</b>	Not available	<b>Viscosity</b>	Not applicable
<b>Flammability limit-upper%</b>	Not available	<b>VOC (weight %)</b>	0%
<b>Oxidizing properties</b>	Not available	<b>Percent volatile</b>	Not applicable

**Other Information**

No relevant additional information available



## SECTION 10: STABILITY AND REACTIVITY

Reactivity:	None
Chemical Stability:	Stable
Possibility of hazardous reactions:	Does not occur
Conditions to avoid:	Avoid creating dusts or exposing magnesium sulfate to high temperatures.
Incompatible materials:	None
Hazardous decompositions products:	Water (steam), magnesium oxide and sulfur oxides. When heated to decomposition, may product metal oxides or fumes.

## SECTION 11: TOXICOLOGICAL INFORMATION

### General information on likely routes of exposure

Ingestion:	May cause mechanical irritation of the digestive tract. Can cause abdominal pain, vomiting and diarrhea and hypocalcemia.
Inhalation:	May cause mechanical irritation of the respiratory tract.
Skin contact:	May cause mechanical skin irritation. May cause irritation. Inorganic magnesium sulfate will not be absorbed through the skin.
Eye contact:	May cause mechanical eye irritation.
Symptoms:	May cause skin, eye, respiratory tract and digestive tract irritation. Can cause abdominal pain, vomiting and diarrhea and hypocalcemia.

### Information on toxicological effects

Acute Toxicity:	No data were identified for the product as a whole. Data are for constituents:
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Ingredient name	Result	Species	Dose	Exposure
Magnesium Sulfate	N/A	N/A	N/A	N/A
Magnesium Chloride	LD <sub>50</sub>	Rat	> 2000 mg/kg	Oral
	LD <sub>50</sub>	Rat	> 2000 mg/kg	Dermal

Serious Eye Damage/Irritation:	Magnesium sulfate hydrate and magnesium chloride may cause mechanical irritation to the eyes.
Skin Corrosion/Irritation:	Magnesium sulfate hydrate and magnesium chloride may cause mechanical irritation to the skin.



## SECTION 11: TOXICOLOGICAL INFORMATION (CONT'D)

Respiratory/Skin Sensitization:	Magnesium chloride (tested in hydrate form) was not sensitizing to the skin of guinea pigs.
Germ Cell Mutagenicity:	Magnesium sulfate anhydrous and magnesium chloride were negative when tested <i>in vitro</i> .
Carcinogenicity:	Magnesium sulfate and magnesium chloride are not listed as a carcinogen by IARC, NTP or OSHA. Magnesium chloride (tested in hydrate form) did not show carcinogenic effects in animal experiments.
Reproductive and Developmental Effects:	Magnesium chloride (tested in hydrate form) did not induce reproductive or developmental effects when tested in animals.
STOT – Single Exposure:	Magnesium chloride (tested in hydrate form) induced no significant toxicity observed in animal studies at concentrations requiring classification.
STOT – Repeated Exposure:	Magnesium chloride (tested in hydrate form) induced no significant toxicity observed in animal studies at concentrations requiring classification..
Aspiration Hazard:	Not relevant

## SECTION 12: ECOLOGICAL INFORMATION

### Ecotoxicity:

Product / ingredient name	Test	Result (mg/L)	Species	Exposure
Magnesium Sulfate (tested as anhydrous form)	LC <sub>50</sub>	14000	<i>Leuciscus idus melanotus</i>	48h
	LC <sub>50</sub>	720	<i>Daphnia magna</i>	48h
	EC <sub>50</sub>	2700	<i>Desmodesmus subspicatus</i>	72h
	EC <sub>50</sub>	8400	<i>Photobacterium phosphoreum</i>	30m
	EC <sub>50</sub>	2700	<i>Chlorella vulgaris</i>	18d
Magnesium Chloride (tested in hydrate form)	EC <sub>50</sub>	> 900	Activated sludge	3 h
	EC <sub>50</sub>	> 100	<i>Desmodesmus subspicatus</i>	72 h
	LC <sub>50</sub>	1328	<i>Daphnia magna</i>	48 h
	LC <sub>50</sub>	2119.3	<i>Pimephales promelas</i>	96 h

Persistence and Degradability:	Metals as a class do not biodegrade.
Bioaccumulative Potential:	No data available.
Mobility:	No data available.





**SECTION 13: DISPOSAL CONSIDERATIONS**

Responsibility for proper waste disposal is with the owner of the waste. Disposal should be in accordance with applicable regional, national and local laws and regulations.

**SECTION 14: TRANSPORT INFORMATION**

UN Number:	Not regulated
UN Proper Shipping Name:	Not regulated
Transport Hazard Class(es):	Not regulated
Packing Group:	Not regulated
Environmental Hazards:	Not regulated
Transport in bulk according to Annex II	Not regulated
MARPOL73/78 and the IBC Code:	
Special Precautions for User:	Not regulated

**SECTION 15: REGULATORY INFORMATION**

TSCA Inventory Status:	This product is listed or exempt from listing on the TSCA Inventory.
CAA HAP:	Not listed
CWA Priority Pollutants:	Not listed
CWA Toxic Pollutants:	Not listed
CWA Hazardous Substances:	Not listed
CERCLA RQ:	Not listed
SARA 313:	Not listed
State Right-to-Know:	

Component	CA Prop 65	Massachusetts	New Jersey	Pennsylvania
Magnesium Sulfate	Not Listed	Not Listed	Not Listed	Not Listed
Magnesium Chloride	Not Listed	Not Listed	Not Listed	Not Listed



## SECTION 16: OTHER INFORMATION

### List of abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS	Chemical Abstract Service
CFR	Code of Federal Regulations
EC50/90	Effective Concentration (median / 90th percentile)
IARC	International Agency for Research on Cancer
IDLH	Immediately Dangerous to Life and Health
LC50/90	Lethal Concentration (median / 90th percentile)
NOEC	No Observed Effect Concentration
NIOSH	National Institute of Occupational Safety and Health
NTP	National Toxicology Program
OSHA	Occupational Safety and Health Administration (United States)
PEL	Permissible Exposure Limit
PBT	Persistent, Bioaccumulative and Toxic
REL	Recommended Exposure Limit
SARA	Superfund Amendments and Reauthorization Act
SDS	Safety Data Sheet
STEL	Short Term Exposure Limit
TLV	Threshold Limit Value
TSCA	Toxic Substances Control Act
TWA	Time Weighted Average
USEPA	United States Environmental Protection Agency

### SDS Revisions

SDS prepared on May 28, 2015.

### Disclaimer

This material safety data sheet was developed based on the technical and toxicological information available and is offered solely for your information, consideration and investigation. It provides no warranties, either express or implied, and assumes no responsibility for the accuracy or completeness of the data contained herein.