

KNIGHT CHEMICALS LLC
7320 WEST FLORIST AVENUE
MILWAUKEE, WI 53218
800-825-7650 • 414-461-0100 • FAX 414-461-0903

MAG

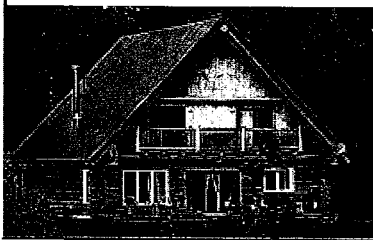
FEBRUARY 17, 2009

MAG Product Specification

Chemical Composition: Magnesium Chloride Hexahydrate Flakes and Pellets

Chemical Formula: $\text{MgCl}_2 \cdot 6\text{H}_2\text{O}$

<u>Chemical</u>	<u>% Present</u>
Magnesium Chloride (MgCl_2)	46.0 - 48.0%
Calcium Chloride (CaCl_2)	2.0 - 3.0%
Potassium Chloride (KCl)	0.5 - 1.0%
Sodium Chloride (NaCl)	0.2 - 1.0%
Sulphates	0.02% Typical
Bulk Density	0.79 – 0.85 Kg/l 49.33 – 53.08 lb/ft ²
Freezing Point	-27°F @ 22% Solution (Saturated)
















Snow & Ice Melters

- ▶ [SnoMelt™](#)
- ▶ [Road Crew™](#)
- ▶ [MAG®](#)
- ▶ [Walk Safe for Pets](#)
- ▶ [ComboTherm™](#)
- ▶ [Rock Salt](#)
- ▶ [Calcium Chloride Flake & Liquid](#)






Premium Wood Coatings

- ▶ [Organiclear™ WR-Series](#)
- ▶ [Organiclear™ TM-Series](#)
- ▶ [Organiclear™ IWF-Series](#)
- ▶ [Log Home Care & Maintenance](#)

Safety Data Sheets

- ▶ [SnoMelt™ - Pellets](#) 
- ▶ [SnoMelt™ - Flake](#) 
- ▶ [Road Crew™](#) 
- ▶ [MAG® - Pellets](#) 
- ▶ [MAG® - Flake](#) 
- ▶ [Rock Salt](#) 
- ▶ [ComboTherm™](#) 
- ▶ [Calcium Chloride LiquiDow™](#) 
- ▶ [Calcium Chloride Flake](#) 
- ▶ [Organiclear™ WR-Series](#) 
- ▶ [Organiclear™ TM-Series](#) 
- ▶ [Organiclear™ IWF-P](#) 
- ▶ [Organiclear™ IWF-A](#) 

Sales Specifications

- ▶ [SnoMelt™ - Pellets](#) 
- ▶ [SnoMelt™ - Flake](#) 
- ▶ [ComboTherm™](#) 
- ▶ [Calcium Chloride LiquiDow™](#) 
- ▶ [Calcium Chloride Flake](#) 

MAG Ice Melting Pellets

MAG® ushers in the New Ice Age... a safer, environmentally-friendly way to offer your customers the total ice control they are looking for. No other ice melter on the market today can compare with MAG®. It is highly effective, while being cost efficient.

Dead Sea Works

MAG® is a product of Dead Sea Works, a recipient of an ISO 9002 quality certificate and a worldwide manufacturer and distributor of chemical products. MAG® is extracted from the Dead Sea by natural evaporation of sea water and an environmentally friendly refinement process.

Total Ice Control

MAG® performs better and is safer and kinder to the environment. Its secret is Total Ice Control. As old as the Dead Sea.

MAG® freezes (22% solution) at -33°C (-27°F) and melts effectively down to -25°C (-13°F), well below most ice melters.

MAG® is safer for the environment because its chloride content is lower than competitive products by at least a full third.

MAG® is less corrosive on metal than virtually all common ice melters.

MAG® results in 26 times less spalling on concrete than calcium chloride or sodium chloride.

MAG® is less toxic than even baking soda or common table salt.

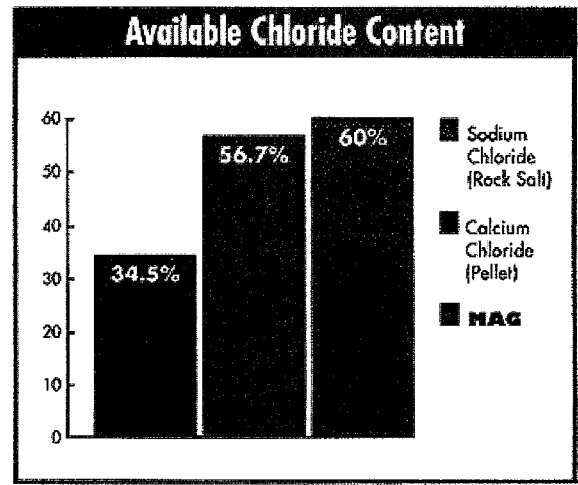
MAG® is safer to use around vegetation, plants, pets and, most importantly, people.

MAG® is much less irritating to the skin than other ice melters.

MAG® does not leave an oily film or dry powder residue.

MAG® is Safer for the Environment

Kinder to the environment. Each spring, the runoff from melting ice and snow dumps harmful chlorides into lakes, rivers and reservoirs. When you use MAG®, you reduce the chloride contamination in surface waters - because environmentally friendly MAG® contains at least one-third less chlorides than either calcium chloride or sodium chloride.



Safer for Plants

Winter is hard enough on plants and shrubs without the added damage caused by some ice melters. Using MAG® as directed keeps green areas healthier. Magnesium is a common ingredient in most fertilizers.

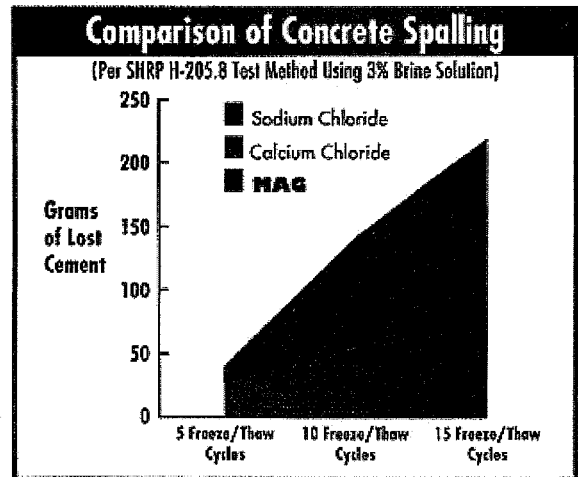
Safer Indoors

MAG® won't leave a powdery residue on household surfaces like floors and carpets unlike most other ice melters.

MAG® is Safer on Concrete and Metal Surfaces

Safer on Concrete

The use of most ice melters sometimes result in damage to concrete sidewalks and driveways. Independent tests conducted by the National Research Council's Strategic Highway Research Program show that calcium chloride caused 26 times more chipping and scaling than MAG®. Sodium chloride (rock salt) caused 63 times more chipping and scaling than MAG®. MAG® is much safer on concrete.

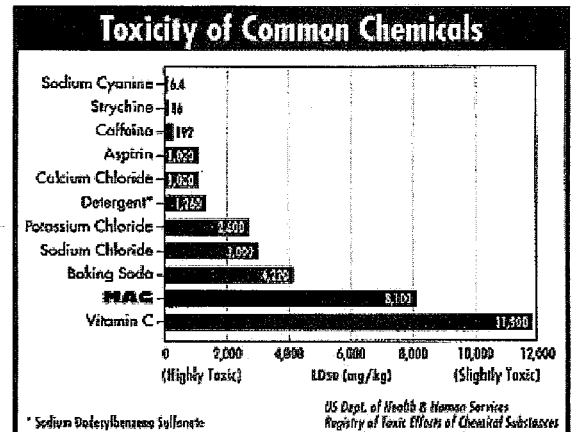


Safer on Metals

From shovels to fence posts, MAG® helps prolong the life of metal equipment and surfaces that come in contact with ice melters. Tests show that MAG® is significantly less corrosive to tin and aluminum than either calcium chloride or sodium chloride.

MAG® is Safer for People and Pets

MAG® is not only safer than other ice melting chemicals, it's actually less toxic than common household substances like table salt and baking soda. And it's significantly less toxic than some foods and medicines like aspirin or even caffeine.



Peace of Mind for Parents

Household safety is an issue with everyone, especially those with infants and toddlers. MAG®'s very low toxicity (it's almost three times less toxic than common table salt) makes it much safer to use and store in the

* Sodium Dodecylbenzene Sulfonate
 US Dept. of Health & Human Services
 Registry of Toxic Effects of Chemical Substances
 The data for MAG is for magnesium chloride hexahydrate, the data for Calcium Chloride is for calcium chloride anhydrous.

home. And unlike some ice melters, it won't irritate tender skin.

Peace of Mind for Pet Owners

Wintry weather won't keep dogs or cats inside. With MAG®, there's less worry about pets licking their paws when they return from a walk. MAG® is actually used in farm feedstocks as a mineral supplement.

Available Quantities of MAG®

50 lb bag (Pellets)

50 lb bag (Flake)

Safety Data Sheets (SDS)

MAG® Pellets 

MAG® Flake 

Sales Specifications Sheets

MAG® Sales Specifications Sheet 

© Copyright 2018 Knight Chemicals, LLC. All rights reserved.

SAFETY DATA SHEET

MAG[®] - MAGNESIUM CHLORIDE PELLETS

MSDS NO.: KC008

Rev Date: 03-02-2015

Rev. Num. 00

1. IDENTIFICATION:

COMPANY NAME: Knight Chemicals LLC
ADDRESS: 7320 W. Florist Ave
Milwaukee, WI 53218
TELEPHONE: 1(800)825-7650
FAX: 1(414)461-0903

EMERGENCY CONTACT: Call CHEMTREC at 800-424-9300 for 24 hour Emergency Response involving a spill, leak, fire, exposure, or accident.

MANUFACTURER: Dead Sea Works LTD. – P.O.B. Beer Sheva 84100, Isreal

PRODUCT NAME / USE: MAG[®] - Magnesium Chloride Pellets

2. HAZARD(S) IDENTIFICATION:

EMERGENCY OVERVIEW:

APPEARANCE: White to off-white solid pellets
ODOR: None
REACTIVITY: None
PRIMARY ROUTE OF ENTRY: Skin Contact

POTENTIAL HEALTH EFFECTS:

EYE: May cause moderate eye irritation. Rinse with water for at least 15 minutes (open eyes).

SKIN CONTACT: Short single exposure not likely to cause significant skin irritation

SKIN ABSORPTION: The substance is not dangerous. However, over exposure or contact with open wounds may cause slight irritation.

INGESTION: The substance is not dangerous. Obtain medical attention if discomfort continues.

INHALATION: The substance is not dangerous by inhalation.

3. COMPOSITION / INFORMATION ON INGREDIENTS:

PRODUCT TRADE NAME: MAG[®]
CHEMICAL NAME: Magnesium Chloride Pellets
SYNONYMS: Magnesium Chloride Pellets
CHEMICAL FAMILY: Inorganic Salt
MOLECULAR FORMULA: MgCl₂
CAS NUMBER: 007791-18-6

<u>CHEMICAL</u>	<u>CAS No.</u>	<u>TLV (ACGIH)</u>	<u>PEL (OSHA)</u>
Magnesium Chloride	007791-18-6	None Established	
Calcium Chloride	010043-52-4	None Established	
Sodium Chloride	007647-14-5	None Established	
Potassium Chloride	007447-40-7	None Established	
Water	007732-18-5	None Established	

4. FIRST AID MEASURES

EYES: Irrigate with flowing water immediately and continuously for 15 minutes. Consult medical personnel.

SKIN: Wash off in flowing water or shower.

INGESTION: If swallowed, induce vomiting only as directed by medical personnel. Call a physician. (Never give anything by mouth or attempt to induce vomiting in an unconscious person.)

INHALATION: Remove to fresh air if effects occur, administer oxygen if necessary. Consult a physician.

5. FIRE-FIGHTING MEASURES:

FIRE & EXPLOSION HAZARD: Negligible fire hazard when exposed to heat or flame.

EXTINGUISHING MEDIA: This material does not burn. If exposed to fire from another source, use suitable extinguishing agent for that fire.

FIRE FIGHTING PROCEDURES: Keep people away. Isolate fire and deny unnecessary entry. This material does not burn. Fight fire for other material that is burning. Water should be applied in large quantities as a fine spray.

SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS: Wear positive-pressure, self-containing breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots and gloves). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-containing breathing apparatus and fight fire from a remote location.

6. ACCIDENTAL RELEASE MEASURES:

Action to take for spills/leaks: Losses incidental to correct application of this product in its intended uses are not expected to be harmful to the environment. Wear appropriate safety apparel during clean-up. See Section 8. Avoid entry of large amount of product into sewers, natural waters, and drinking water sources. Due to possible harmful effects, avoid contact with vegetation, animals and fish life. Recover quickly into suitable, dry sealable containers if reusing. Small quantities may be flushed away with plenty of water. Walking surfaces may remain wet longer due to moisture being held by spilled product--avoid by thoroughly water washing surfaces.

7. HANDLING & STORAGE

Comply with federal, state, and local laws, regulations and procedures when storing this product. Store in a tightly closed container. Store away from incompatible materials. Do not store in attic, upper floors or any area where leaking of contents could cause damage.

SPECIAL PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: Avoid eye and prolonged skin contact

8. EXPOSURE CONTROLS / PERSONAL PROTECTION:

EXPOSURE GUIDELINES: There are no occupational exposure limits established by OSHA, ACGIH or NIOSH.

VENTILATION: Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines.

RESPIRATORY PROTECTION: Atmospheric levels should be maintained below the exposure guidelines. When respiratory protection is required for certain operations use an approved air-purifying respirator. In dusty atmospheres, use an approved dust respirator.

SKIN PROTECTION: For brief contact, no precautions other than clean body-covering clothing should be needed. Use protective clothing impervious to this material. Selection of specific items such as gloves, boots, aprons, or full-body suit will depend on operation. If skin comes in contact with contaminated clothing, remove the clothing immediately, wash skin area with soap and water, and launder clothing before reuse.

EYE PROTECTION: Safety glasses should be sufficient for most operations; however, for dusty operations or when handling solutions of the material, wear chemical goggles. Eye wash fountain should be located in immediate work area.

9. PHYSICAL & CHEMICAL PROPERTIES:

MELTING POINT:	N/A
BOILING POINT:	N/A
VAPOR PRESSURE:	N/A
VAPOR DENSITY:	N/A
SOLUBILITY IN WATER:	167 g/100 ml Water
SPECIFIC GRAVITY:	N/A
APPEARANCE:	White to off-white solid pellets
ODOR:	None
EVAPORATION RATE:	Not applicable
FLASH POINT:	None – Product is not combustible
METHOD USED:	Not applicable
FLAMMABLE LIMITS:	
LFL	Not applicable
UFL	Not applicable
AUTOIGNITION TEMPERATURE:	Not applicable
HYGROSCOPIC:	YES

10. STABILITY & REACTIVITY:

STABILITY: Stable. Hygroscopic.

CONDITIONS TO AVOID: Decomposes at >160° F

INCOMPATIBILITY: Excessive exposure to air will lead to wetting and caking,

HAZARDOUS DECOMPOSITION PRODUCTS: Oxides of: potassium, calcium, magnesium and sodium, and above 160°C decomposes giving HCl gases.

HAZARDOUS POLYMERIZATION: Will not occur.

11. TOXICOLOGICAL INFORMATION:

Acute toxicity by manufacturer:

LD50 (oral rat) 8100 mg/kg

MAGNESIUM CHLORIDE:

LD50 (oral rat) 2800 mg/kg

CALCIUM CHLORIDE:

LD50 (oral rat) 1000 mg/kg

LD50 (oral mouse) 1940 mg/kg

SODIUM CHLORIDE:

LD50 (oral rat) 3000 mg/kg

LC50 (inhalation rat) 42000 mg/m³ (60 min)

LD50 (absorption through skin rabbit) 10000 mg/kg

POTASSIUM CHLORIDE:

LD50 (oral rat) 2600 mg/kg

LDLo (intraperitoneal dog) 85 mg/kg

LD50 (oral mouse) 383 mg/kg

LD50 (intraperitoneal rat) 660 mg/kg

12. ECOLOGICAL INFORMATION:

ENVIRONMENTAL HAZARDS: If properly introduced in small concentrations into adapted biological sewage treatment plants, decomposition of the activated sludge is not affected.

Not mentioned in the EC Regulations of 4/5/76 concerning discharge of dangerous materials into waters, neither in List I nor List II.

MgCl₂ is a component of seawater.

13. DISPOSAL CONSIDERATIONS:

DISPOSAL METHOD: Comply with federal, state, and local laws, regulations and procedures. Contact manufacturer and/or authorities for detailed information. Product as sold is not an RCRA listed or characteristic hazardous waste.

14. TRANSPORT INFORMATION:

U.S. DOT 49 CFR 172.101: Not Regulated

CANADIAN TRANSPORTATION OF DANGEROUS GOODS: Not Regulated

The Transportation of Dangerous Goods Act (**T.D.G.A.**) classification for this product is: Not Regulated

15. REGULATORY INFORMATION:

REGULATION INFORMATION: (Not meant to be all-inclusive--selected regulations represented.)

TSCA STATUS:	Yes
DSL STATUS:	Yes
EINECS STATUS:	Yes
OTHER TSCA ISSUES:	None

CALIFORNIA PROPOSITION 65: This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

NOTICE: The information herein is presented in good faith and believed to be accurate as of the effective date shown below. However, no warranty, expressed or implied, is given. Regulatory requirements are subject to change and may differ from one location to another; it is the buyer's responsibility to ensure that its activities comply with federal, state or provincial, and local laws. The following specific information is made for the purpose of complying with numerous federal, state or provincial, and local laws and regulations. See MSD Sheet for health and safety information.

16. OTHER INFORMATION:

Information contained on these sheets needs to be made available to your workers according to the OSHA Hazard Communication Standard 29CFR 1910.1200 and the Workplace Hazardous Materials Information System (WHMIS).

This Safety Data Sheet and the information it contains is offered to you in good faith as accurate, but there is no representation, guarantee or warranty, either expressed or implied, regarding its accuracy, reliability or completeness. This information relates to the specific product designated and may not be valid for such product used in combination with any other materials or in any other processes. Certain health and safety precautions given in this data sheet may not be adequate for all individuals and/or situations. It is the user's responsibility to use this product safely and to satisfy themselves as to the suitability and completeness of such information for their own particular use. Consult with appropriate experts to guard against hazards associated with the use of this product and its ingredients. We do not accept liability for any loss or damage that may occur from the use of this information nor do we offer warranty against patent infringement.

The conditions of storage, handling, use and disposal of the product are beyond our control. For this and other reasons, we do not assume any responsibility and expressly disclaim any liability for loss, damage, or expense arising out of or in any way connected with the storage, handling, use or disposal of the product.