1. Product and Company Identification

Product identifier: Magnesium Chloride Hexahydrate
Other means of identification: CAS# 7791-18-6, MAG Pellets, MAG Flakes, Dust suppression, deicing, aquaculture, snow and ice control, general industrial and specialty uses.

None known.

Chemical Solutions, Inc.
P. O. Box 675
Franklin, MA 02038 US
Phone 508-520-3900
Emergency US CHEMTREC 1-800-424-9300
Emergency Canada CANUTEC 1-800-996-6666
1-800-424-9300
1-800-996-6666

2. Hazards Identification

Physical hazards: Not classified.
Health hazards: Not classified.
Environmental hazards: Not classified.
OSHA defined hazards: Not classified.

Label elements:
- Hazard symbol: None.
- Signal word: None.
- Hazard statement: The substance does not meet the criteria for classification.
- Precautionary statement:
  - Prevention: Observe good industrial hygiene practices.
  - Response: Wash hands after handling.
  - Storage: Store away from incompatible materials.
  - Disposal: Dispose of waste and residues in accordance with local authority requirements.
- Hazard(s) not otherwise classified (HNOC): None known.
- Supplemental information: Not applicable.

3. Composition/Information on Ingredients

Substance Composition comments: The criteria for listing components in this section are: Carcinogens, Respiratory Sensitizers, Mutagens, Teratogens and Reproductive toxins are listed when present at 0.1% or greater; components which are otherwise hazardous according to WHMIS/OSHA are listed when present at 1.0% or greater. Non-hazardous components are not listed. The products pertaining to this SDS have various proportions of components which do not meet the listing criteria.

4. First Aid Measures

Inhalation: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Call a physician if symptoms develop or persist.

Skin contact: Rinse skin with water/shower. Get medical attention if irritation develops and persists.

Eye contact: Rinse with water. Get medical attention if irritation develops and persists.

Ingestion: Rinse mouth. If ingestion of a large amount does occur, call a poison control center immediately.

Most important symptoms/effects, acute and delayed: Direct contact with eyes may cause temporary irritation.
5. Fire Fighting Measures

Suitable extinguishing media
- Treat symptomatically.

Unsuitable extinguishing media
- Treat for surrounding material.
- None known.

Specific hazards arising from the chemical
- During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters
- Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire-fighting equipment/instructions
- Use standard firefighting procedures and consider the hazards of other involved materials.

Specific methods
- Cool containers exposed to flames with water until well after the fire is out.

General fire hazards
- No unusual fire or explosion hazards noted.

Explosion data
- Not available.

6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures
- Keep unnecessary personnel away. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up
- This product is miscible in water. Stop the flow of material, if this is without risk. Following product recovery, flush area with water. For waste disposal, see section 13 of the SDS.

Environmental precautions
- Avoid discharge into drains, water courses or onto the ground.

7. Handling and Storage

Precautions for safe handling
- Use care in handling/storage. Avoid breathing dust.

Conditions for safe storage, including any incompatibilities
- Keep container tightly closed in a cool, dry and well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure Controls/Personal Protection

Occupational exposure limits
- No exposure limits noted for ingredient(s).

Biological limit values
- No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls
- TWA PEL: No specific limits have been established for magnesium chloride (a soluble substance). As a guideline, OSHA (United States) has established the following limits which are generally recognized for inerts or nuisance dust. Particulates Not Otherwise Regulated (PNOR): 5mg/cu.m. Respirable Dust 8-Hour TWA PEL, 15mg/cu.m. Total Dust 8-Hour TWA PEL.
- TWA TLV: No specific limits have been established for magnesium chloride (a soluble substance). As a guideline, ACGIH (United States) has established the following limits which are generally recognized for inerts or nuisance dust. Particulates (insolubles) Not Otherwise Classified (PNOC): 10mg/cu.m. Inhalable Particulate 8-Hours TWA TLV, 3mg/cu.m. Respirable Particulate TWA TLV.

- Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. If user operations generate dust, fumes, or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Individual protection measures, such as personal protective equipment
- Eye/face protection
  - Safety glasses
- Skin protection
  - Rubber gloves. Confirm with a reputable supplier first.
- Hand protection
  - Confirm with a reputable supplier first.
- Other
  - As required by employer code.
- Respiratory protection
  - Where exposure guideline levels may be exceeded, use an approved NIOSH respirator or NIOSH-approved filtering facepiece.
- Thermal hazards
  - Not applicable.
### 9. Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Appearance</strong></td>
<td>Flake and/or Pellet</td>
</tr>
<tr>
<td><strong>Physical state</strong></td>
<td>Solid.</td>
</tr>
<tr>
<td><strong>Form</strong></td>
<td>Flake, Pellet,</td>
</tr>
<tr>
<td><strong>Color</strong></td>
<td>White</td>
</tr>
<tr>
<td><strong>Odor</strong></td>
<td>Odorless</td>
</tr>
<tr>
<td><strong>Odor threshold</strong></td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>pH</strong></td>
<td>9 - 10 (Basic)</td>
</tr>
<tr>
<td><strong>Melting point/freezing point</strong></td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Initial boiling point and boiling range</strong></td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Pour point</strong></td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Specific gravity</strong></td>
<td>1.57 (H2O = 1)</td>
</tr>
<tr>
<td><strong>Partition coefficient</strong></td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Flash point</strong></td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Evaporation rate</strong></td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Flammability (solid, gas)</strong></td>
<td>Not applicable.</td>
</tr>
<tr>
<td><strong>Upper/lower flammability or explosive limits</strong></td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Flammability limit - lower (%)</strong></td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Flammability limit - upper (%)</strong></td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Explosive limit - lower (%)</strong></td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Explosive limit - upper (%)</strong></td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Vapor pressure</strong></td>
<td>0.09 kPa (0.7 mmHg) @ 68°C</td>
</tr>
<tr>
<td><strong>Vapor density</strong></td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Relative density</strong></td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Solubility(ies)</strong></td>
<td>Soluble</td>
</tr>
<tr>
<td><strong>Auto-ignition temperature</strong></td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Decomposition temperature</strong></td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Viscosity</strong></td>
<td>Not available.</td>
</tr>
</tbody>
</table>

### 10. Stability and Reactivity

**Reactivity**: Reactive with oxidizing agents, acids, metals in presence of moisture.

**Possibility of hazardous reactions**: No dangerous reaction known under conditions of normal use.

**Chemical stability**: Material is stable under normal conditions.

**Conditions to avoid**: Contact with incompatible materials.


**Hazardous decomposition products**: May include and are not limited to: Hydrogen chloride. Chlorine gas. Oxides of magnesium.

### 11. Toxicological Information

**Information on likely routes of exposure**

- **Ingestion**: Expected to be a low ingestion hazard.
- **Inhalation**: No adverse effects due to inhalation are expected.
- **Skin contact**: No adverse effects due to skin contact are expected.
- **Eye contact**: Direct contact with eyes may cause temporary irritation.

**Symptoms related to the physical, chemical and toxicological characteristics**: Direct contact with eyes may cause temporary irritation.
Information on toxicological effects

Acute toxicity
Not classified.

Skin corrosion/irritation
Prolonged skin contact may cause temporary irritation.

   Exposure minutes  Not available.
   Erythema value    Not available.
   Oedema value      Not available.

Serious eye damage/eye irritation
Direct contact with eyes may cause temporary irritation.

   Corneal opacity value Not available.
   Iris lesion value    Not available.
   Conjunctival reddening value Not available.
   Conjunctival oedema value Not available.
   Recover days         Not available.

Respiratory or skin sensitization
Not classified.

   Respiratory sensitization Not classified.
   Skin sensitization      This product is not expected to cause skin sensitization.
   Germ cell mutagenicity  No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
   Mutagenicity            No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
   Carcinogenicity         This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
   Reproductive toxicity   This product is not expected to cause reproductive or developmental effects.
   Teratogenicity          Not classified.
   Specific target organ toxicity - single exposure Not classified.
   Specific target organ toxicity - repeated exposure Not classified.
   Aspiration hazard       Not classified.
   Chronic effects         Not classified.

Further information
This product has no known adverse effect on human health.

Name of Toxicologically Synergistic Products
Not available.

12. Ecological Information

Ecotoxicity
The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

<table>
<thead>
<tr>
<th>Product</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Magnesium Chloride Hexahydrate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aquatic Crustacea</td>
<td>EC50 Calanoid copepod (Eudiaptomus padanus</td>
<td>95 - 342 mg/l, 48 hours</td>
</tr>
<tr>
<td></td>
<td>padanus)</td>
<td></td>
</tr>
<tr>
<td>Fish</td>
<td>LC50 Fathead minnow (Pimephales promelas)</td>
<td>1580 - 2740 mg/l, 96 hours</td>
</tr>
</tbody>
</table>

Persistence and degradability
No data is available on the degradability of this product.

Bioaccumulative potential
No data available.

Mobility in soil
No data available.

Mobility in general
Not available.

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

Disposal instructions
Collect and reclaim or dispose in sealed containers at licensed waste disposal site.

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).

Contaminated packaging
Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport Information

U.S. Department of Transportation (DOT)
Not regulated as dangerous goods.

Transportation of Dangerous Goods (TDG - Canada)
Not regulated as dangerous goods.

15. Regulatory Information

Canadian federal regulations
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations.

WHMIS status
Not Controlled

US federal regulations
TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)
Not listed.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)
Not regulated.

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List
Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)
Hazard categories
Immediate Hazard - No
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance
No

SARA 311/312 Hazardous chemical
No

SARA 313 (TRI reporting)
Not regulated.

Other federal regulations
Safe Drinking Water Act (SDWA)
Not regulated.

Food and Drug Administration (FDA)
Total food additive
Direct food additive
GRAS food additive

US state regulations
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.

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance
Not listed.

US. Massachusetts RTK - Substance List
Not regulated.

US. Pennsylvania RTK - Hazardous Substances
Not regulated.

US. Rhode Island RTK
Not regulated.

Inventory status

<table>
<thead>
<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada</td>
<td>Domestic Substances List (DSL)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Non-Domestic Substances List (NDSSL)</td>
<td>No</td>
</tr>
<tr>
<td>United States &amp; Puerto Rico</td>
<td>Toxic Substances Control Act (TSCA) Inventory</td>
<td>Yes</td>
</tr>
</tbody>
</table>

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
16. Other Information

**LEGEND**

<table>
<thead>
<tr>
<th>HEALTH</th>
<th>/ 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>FLAMMABILITY</td>
<td>0</td>
</tr>
<tr>
<td>PHYSICAL HAZARD</td>
<td>0</td>
</tr>
<tr>
<td>PERSONAL PROTECTION</td>
<td>E</td>
</tr>
</tbody>
</table>

**Disclaimer**
The information in the sheet was written based on the best knowledge and experience currently available. Information contained herein was obtained from sources considered technically accurate and reliable. While every effort has been made to ensure full disclosure of product hazards, in some cases data is not available and is so stated. Since conditions of actual product use are beyond control of the supplier, it is assumed that users of this material have been fully trained according to the requirements of all applicable legislation and regulatory instruments. No warranty, expressed or implied, is made and supplier will not be liable for any losses, injuries or consequential damages which may result from the use of or reliance on any information contained in this document.

**Issue date**
01-June-2015

**Effective date**
01-June-2015

**Expiry date**
01-June-2018

**Further information**
For an updated SDS, please contact Chemical Solutions, Inc. Phone: (508) 520-3900.

**Prepared by**
Chemical Solutions, Inc. Phone: (508) 520-3900

**Other information**
This Safety Data Sheet was prepared to comply with the current OSHA Hazard Communication Standard (HCS) adoption of the Globally Harmonized System of Classification and Labeling of Chemicals (GHS). This SDS conforms to the ANSI Z400.1/Z129.1-2010 Standard.