Section 1 - Product and Company Information

Product Name: G 418 disulfate salt, powder, cell culture tested
Product Number: A1720
Brand: Sigma Chemical
Company: Sigma-Aldrich
Street Address: 3005 SNP Road
City, State, Zip: SAINT LOUIS, MO 63105 US
Technical Phone: 600-325-5832
Emergency Phone: 314-776-5555
Fax: 600-325-5556

Section 2 - Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Substance Name</th>
<th>CAS #</th>
<th>SARA 212</th>
<th>EC no</th>
<th>Annex I Index Number</th>
</tr>
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<tbody>
<tr>
<td>G418, DISULFATE SALT</td>
<td>108321-42-2</td>
<td>No</td>
<td></td>
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</tr>
</tbody>
</table>

Formula: C20H40N4O10.2H2SO4
Product Use: An antibiotic active against bacteria, yeasts, fungi, algae, plant and animal cells.

Section 3 - Hazards Identification

Emergency Overview
Caution: Avoid contact and inhalation. Target organ(s): Kidneys, Ears.

HMIS Rating
Health: 1*
Flamability: 0
Reactivity: 0

NFPA Rating
Health: 1
Flamability: 0
Reactivity: 0

*additional chronic hazards present.
For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

Oral Exposure
If swallowed, wash out mouth with water provided person is conscious. Call a physician.

Inhalation Exposure
If inhaled, remove to fresh air. If breathing becomes difficult, call a physician.

Dermal Exposure
In case of contact, immediately wash skin with soap and copious amounts of water.

Section 5 - Fire Fighting Measures

Autoignition Temp: N/A
Extinguishing Media
Suitable: Water spray. Carbon dioxide, dry chemical powder, or appropriate foam.

Firefighting
Protective Equipment
Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.
Specific Hazard(s)
Emits toxic fumes under fire conditions.

Section 6 - Accidental Release Measures

Procedure(s) of Personal Precaution(s)
Exercise appropriate precautions to minimize direct contact with skin or eyes and prevent inhalation of dust.

Methods for Cleaning Up
Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

Handling
User Exposure
Avoid inhalation. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

Storage
Suitable: Keep tightly closed. Store at 2-8°C.

Section 8 - Exposure Controls / PPE

Engineering Controls
Safety shower and eye bath. Mechanical exhaust required.

Personal Protective Equipment
Respiratory
Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type F1 (EN 143) dust masks.

Hand
Protective gloves.

Eye
Chemical safety goggles.

Sigma Chemical - A1720
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Sigma-Aldrich Corporation
www.sigma-aldrich.com
Section 9 - Physical/Chemical Properties

<table>
<thead>
<tr>
<th>Appearance</th>
<th>Physical State</th>
<th>Color</th>
<th>Form</th>
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</thead>
<tbody>
<tr>
<td>Solid</td>
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<td>Powder</td>
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<table>
<thead>
<tr>
<th>Molecular Weight</th>
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<table>
<thead>
<tr>
<th>Property</th>
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</thead>
<tbody>
<tr>
<td>pH</td>
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<tr>
<td>BP/PD Range</td>
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<tr>
<td>M/PV Range</td>
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<tr>
<td>Freezing Point</td>
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<tr>
<td>Vapor Pressure</td>
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<td>Saturated Vapor Conc.</td>
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<td>Evaporation Rate</td>
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<td>Autoignition Temp</td>
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<tr>
<td>Solubility</td>
<td>N/A</td>
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</table>

N/A = not available

Section 10 - Stability and Reactivity

Stability
- Stable
- Stable
- Stable

Materials to Avoid
- Strong oxidizing agents.

Hazardous Decomposition Products
- Carbon monoxide, Carbon dioxide, Nitrogen oxides, Sulfur oxides.

Section 11 - Toxicological Information

Hazardous Polymerization
- Will not occur.

Route of Exposure
- Skin Contact
  - May cause skin irritation.
- Skin Absorption
  - May be harmful if absorbed through the skin.
- Eye Contact
  - May cause eye irritation.
- Inhalation
  - May be harmful if inhaled. Material may be irritating to mucous membranes and upper respiratory tract.
- Ingestion
  - May be harmful if swallowed.

Target Organ(s) or System(s)
- Kidneys. Ears.

Signs and Symptoms of Exposure
- Aminoglycosides are associated with significant nephrotoxicity and/or ototoxicity.

RTECS Number: N/A

Section 12 - Ecological Information

No data available.

Section 13 - Disposal Considerations

Appropriate Method of Disposal of Substance or Preparation
- Contact a licensed professional waste disposal service to dispose of this material. Dispose of or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.

Section 14 - Transport Information

DOT
- Proper Shipping Name: None
- Non-Hazardous for Transport: This substance is considered to be non-hazardous for transport.

IATA
- Non-Hazardous for Air Transport: Non-hazardous for air transport.

Section 15 - Regulatory Information

EU Additional Classification
- Safety Statements: S: 22 24/25
  - Do not breathe dust. Avoid contact with skin and eyes.

US Classification and Label Text
- US Statements
  - Caution: Avoid contact and inhalation. Target organ(s): Kidneys, Ears.

United States Regulatory Information
- SARA Listed: No
Canada Regulatory Information
WHMIS Classification
This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.
DRL: No
NDSL: No

Section 16 - Other Information

Disclaimer
For R&D use only. Not for drug, household or other uses.

Warranty
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 Inc. shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2006 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.