**SAFETY DATA SHEET**  
**Fumagillin**

Cayman Chemical Company  
1180 E. Ellsworth Rd.  
Ann Arbor, MI 48108

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### Section 1. Identification of the Substance/Mixture and of the

<table>
<thead>
<tr>
<th>1.1 Product Code:</th>
<th>11332</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Name:</td>
<td>Fumagillin</td>
</tr>
<tr>
<td>Synonyms:</td>
<td>1-[(3R,4S,5S,6R)-5-methoxy-4-[(2R,3R)-2-methyl-3-(3-methyl-2-buten-1-yl)-2-oxiranyl]-1-oxaspiro[2.5]oct-6-yl] ester-2E,4E,6E,8E-decatetraenedioic acid; Amebacilin; NSC 9168;</td>
</tr>
</tbody>
</table>

### Section 2. Hazards Identification

**GHS Classification**

<table>
<thead>
<tr>
<th>Acute Toxicity: Inhalation, Category 4</th>
<th>Exclamation point</th>
<th>Warning</th>
<th>Harmful if inhaled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Toxicity: Oral, Category 4</td>
<td>Exclamation point</td>
<td>Warning</td>
<td>Harmful if swallowed</td>
</tr>
<tr>
<td>Acute Toxicity: Skin, Category 4</td>
<td>Exclamation point</td>
<td>Warning</td>
<td>Harmful in contact with skin</td>
</tr>
</tbody>
</table>

**GHS Hazard Phrases:**

- H332: Harmful if inhaled.
- H302: Harmful if swallowed.
- H312: Harmful in contact with skin.

**GHS Precaution Phrases:**

- P261: Avoid breathing dust/fume/gas/mist/vapours/spray.
- P264: Wash hands thoroughly after handling.
- P280: Wear protective gloves/protective clothing/eye protection/face protection.
- P362+364: Take off contaminated clothing and wash it before reuse.

**GHS Response Phrases:**

- P304+340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- P312: Call a POISON CENTER/doctor/... if you feel unwell.
- P301+312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
- P330: Rinse mouth.
- P302+352: IF ON SKIN: Wash with plenty of soap and water.
- P321: Specific treatment {see ... on this label}.

**GHS Storage and Disposal Phrases:**

- Please refer to Section 7 for Storage and Section 13 for Disposal information.

### 2.3 Adverse Human Health Effects and Symptoms:

- Harmful if swallowed, in contact with skin or if inhaled.
- Material may be irritating to the mucous membranes and upper respiratory tract.
- May cause eye, skin, or respiratory system irritation.
- To the best of our knowledge, the toxicological properties have not been thoroughly investigated.

**Target Organs:**

No data available.
**SAFETY DATA SHEET**

**Fumagillin**

**LD 50 / LC 50:** Please refer to Section 11.

**Medical Conditions Generally Aggravated By Exposure:** No data available.

### Section 3. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Hazardous Components (Chemical Name)</th>
<th>CAS #</th>
<th>Concentration</th>
<th>EC#</th>
<th>Risk Phrases</th>
<th>RTECS #</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Fumagillin</td>
<td>23110-15-8</td>
<td>100.0 %</td>
<td>248-433-8</td>
<td>R20/21/22</td>
<td>HE1750000</td>
</tr>
</tbody>
</table>

### Section 4. First Aid Measures

**4.1 Description of First Aid Measures:**

**4.1.1 In Case of Inhalation:** Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.

**4.1.2 In Case of Skin Contact:** Immediately wash skin with soap and plenty of water for at least 20 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.

**4.1.3 In Case of Eye Contact:** Hold eyelids apart and flush eyes with plenty of water for at least 20 minutes. Have eyes examined and tested by medical personnel.

**4.1.4 In Case of Ingestion:** No data available.

**4.2 Important Symptoms and Effects, Both Acute and Delayed:** No data available.

**4.3 Indication of any immediate medical attention and special treatment needed:** No data available.

### Section 5. Fire Fighting Measures

**5.1 Suitable Extinguishing Media:** Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray. Use water spray to cool fire-exposed containers.

**Unsuitable Extinguishing Media:** A solid water stream may be inefficient.

**5.2 Flammable Properties and Hazards:** No data available.

Flash Pt: No data.

Autoignition Pt: No data available.

Explosive Limits: LEL: No data. UEL: No data.

Hazardous Combustion Products: No data available.

**5.3 Fire Fighting Instructions:** As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent), and full protective gear to prevent contact with skin and eyes.

### Section 6. Accidental Release Measures

**6.1 Protective Precautions, Protective Equipment and Emergency Procedures:** Avoid raising and breathing dust, and provide adequate ventilation. As conditions warrant, wear a NIOSH approved self-contained breathing apparatus, or respirator, and appropriate personal protection (rubber boots, safety goggles, and heavy rubber gloves).

**6.2 Environmental Precautions:** Take steps to avoid release into the environment, if safe to do so.

**6.3 Methods and Material For Containment and Cleaning Up:** Contain spill and collect, as appropriate. Transfer to a chemical waste container for disposal in accordance with local regulations.

### Section 7. Handling and Storage

**7.1 Precautions To Be Taken in Handling:** Avoid breathing dust/fume/gas/mist/vapours/spray. Avoid prolonged or repeated exposure.

**7.2 Precautions To Be Taken in Storing:** Keep container tightly closed. Store in accordance with information listed on the product insert.
Section 8. Exposure Controls/Personal Protection

<table>
<thead>
<tr>
<th>Hazardous Components (Chemical Name)</th>
<th>CAS #</th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
<th>Other Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Fumagillin</td>
<td>23110-15-8</td>
<td>No data</td>
<td>No data</td>
<td>No data</td>
</tr>
</tbody>
</table>

**Hazard Label Information:**
- Avoid contact with skin and eyes.
- Do not reuse this container.
- Use with adequate ventilation.
- Wash thoroughly after handling.

**Protective Equipment Summary - Hazard Label Information:**
- Compatible chemical-resistant gloves
- Eye wash station in work area
- Lab coat
- Safety glasses
- Safety shower in work area
- Vent Hood

**Section 9. Physical and Chemical Properties**

**9.1 Information on Basic Physical and Chemical Properties**

**Physical States:** [ ] Gas  [ ] Liquid  [X] Solid

**Appearance and Odor:** A crystalline solid

**Melting Point:** No data.

**Boiling Point:** No data.

**Flash Pt:** No data.

**Evaporation Rate:** No data.

**Vapor Pressure (vs. Air or mm Hg):** No data.

**Vapor Density (vs. Air = 1):** No data.

**Specific Gravity (Water = 1):** No data.

**Solubility in Water:** No data.

**Solubility Notes:** ~0.5 mg/ml in 1:1 DMSO:PBS (pH 7.2); ~0.25 mg/ml in EtOH; ~30 mg/ml in DMF & DMSO;

**Autoignition Pt:** No data.

**Explosive Properties:** No data available.

**Oxidizing Properties:** No data available.

**9.2 Other Information**

**Percent Volatile:** No data.

**Formula:** C26H34O7

**Molecular Weight:** 458.60
Section 10. Stability and Reactivity

10.1 Reactivity: No data available.

10.2 Stability: Unstable [    ] Stable [ X ]

10.3 Stability Note(s): Stable if stored in accordance with information listed on the product insert.

10.4 Conditions To Avoid: No data available.

10.5 Incompatibility - Materials To Avoid: strong oxidizing agents

10.6 Hazardous Decomposition Or Byproducts:
   carbon dioxide
   carbon monoxide

Section 11. Toxicological Information

11.1 Information on Toxicological Effects: The toxicological effects of this product have not been thoroughly studied.

Fumagillin - Toxicity Data: Oral LD50 (mouse): 2,000 mg/kg;

Chronic Toxicological Effects:
Fumagillin - Investigated as a reproductive effector.
Only select Registry of Toxic Effects of Chemical Substances (RTECS) data is presented here. See actual entry in RTECS for complete information.
Fumagillin RTECS Number: HE1750000

Section 12. Ecological Information

12.1 Toxicity: Avoid release into the environment.
Runoff from fire control or dilution water may cause pollution.

Section 13. Disposal Considerations

13.1 Waste Disposal Method: Dispose in accordance with local, state, and federal regulations.

Section 14. Transport Information

14.1 LAND TRANSPORT (US DOT)
   DOT Proper Shipping Name: Not dangerous goods.

14.1 LAND TRANSPORT (European ADR/RID)
   ADR/RID Shipping Name: Not dangerous goods.

14.3 AIR TRANSPORT (ICAO/IATA)
   ICAO/IATA Shipping Name: Not dangerous goods.

   Additional Transport Information: Transport in accordance with local, state, and federal regulations.

Section 15. Regulatory Information

European Community Hazard Symbol codes Xn: Harmful

European Community Risk and Safety Phrases
   R20/21/22 - Harmful by inhalation, in contact with skin and if swallowed.
   S22 - Do not breathe dust.
   S24/25 - Avoid contact with skin and eyes.
   S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
   S28 - After contact with skin, wash immediately with plenty of soap-suds.
   S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection.

US EPA SARA Title III

<table>
<thead>
<tr>
<th>Hazardous Components (Chemical Name)</th>
<th>CAS #</th>
<th>Sec.302 (EHS)</th>
<th>Sec.304 RQ</th>
<th>Sec.313 (TRI)</th>
<th>Sec.110</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Fumagillin</td>
<td>23110-15-8</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
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</table>

Multi-region format
Other US EPA or State Lists

<table>
<thead>
<tr>
<th>Hazardous Components (Chemical Name)</th>
<th>CAS #</th>
<th>CAA HAP, ODC</th>
<th>CWA NPDES</th>
<th>TSCA</th>
<th>CA PROP.65</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Fumagillin</td>
<td>23110-15-8</td>
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</table>

**Regulatory Information Statement:**

This SDS was prepared in accordance with Regulation (EC) No.1272/2008 and European Directive 67/548/EEC as amended.

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**Section 16. Other Information**

**Revision Date:** 06/26/2013

**Company Policy or Disclaimer**

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N.A.=Not available, N.P.=Not applicable, N.D.=Not determined, N.E.=Not established, N.R.=Not required