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

1.1 Product Code: 14716

Product Name: Aprotinin

Synonyms: Bovine Pancreatic Trypsin Inhibitor; BPTI;

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

Relevant identified uses: For research use only, not for human or veterinary use.

1.3 Details of the Supplier of the Safety Data Sheet

Company Name: Cayman Chemical Company

Emergency Contact: CHEMTREC Within USA and Canada: +1 (800)424-9300

Alternate Emergency Contact: CHEMTREC Outside USA and Canada: +1 (703)527-3887

Information: Cayman Chemical Company +1 (734)971-3335

Web site address: www.caymanchem.com

Section 2. Hazards Identification

<table>
<thead>
<tr>
<th>GHS Classification</th>
<th>Placard</th>
<th>Key word</th>
<th>GHS hazard phrase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respiratory Sensitization, Category 1</td>
<td>Health hazard</td>
<td>Danger</td>
<td>May cause allergy or asthma symptoms or breathing difficulties if inhaled</td>
</tr>
<tr>
<td>Skin Sensitization, Category 1</td>
<td>Exclamation point</td>
<td>Warning</td>
<td>May cause an allergic skin reaction</td>
</tr>
</tbody>
</table>

GHS Hazard Phrases:
H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H317: May cause an allergic skin reaction.

GHS Precaution Phrases:
P261: Avoid breathing {dust/fume/gas/mist/vapours/spray}.
P284: {In case of inadequate ventilation, }wear respiratory protection.
P272: Contaminated work clothing should not be allowed out of the workplace.
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+341: IF INHALED: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing.
P342+311: If experiencing respiratory symptoms call a POISON CENTER or doctor/physician.
P302+352: IF ON SKIN: Wash with plenty of soap and water.
P333+313: If skin irritation or rash occurs, seek medical advice/attention.

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:
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause an allergic skin reaction.
Material may be irritating to the mucous membranes and upper respiratory tract.
May be harmful by inhalation, ingestion, or skin absorption.
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.

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

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>Aprotinin</td>
<td>9087-70-1</td>
<td>100.0 %</td>
<td>232-994-9</td>
<td>R42/43</td>
<td>YN5080000</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: Exposure may cause: Nausea, vomiting, diarrhea, muscle pains, blood pressure changes, and bronchospasm.

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.

5.2 Flammable Properties and Hazards: 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.

Hazard Label Information: Avoid contact with skin and eyes. Do not reuse this container. Use with adequate ventilation. Wash thoroughly after handling.
### 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>Aprotinin</td>
<td>9087-70-1</td>
<td>No data.</td>
<td>No data.</td>
<td>No data.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hazardous Components (Chemical Name)</th>
<th>CAS #</th>
<th>Britain EH40</th>
<th>France VL</th>
<th>Europe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aprotinin</td>
<td>9087-70-1</td>
<td>No data.</td>
<td>No data.</td>
<td>No data.</td>
</tr>
</tbody>
</table>

**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

**8.2.1 Engineering Controls (Ventilation etc.):**
Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

**8.2.2.1 Eye Protection:**
Safety glasses

**8.2.2.2 Protective Gloves:**
Compatible chemical-resistant gloves

**8.2.2.3 Respiratory Equipment (Specify Type):**
NIOSH approved respirator, as conditions warrant.

**Work/Hygienic/Maintenance Practices:**
- Do not take internally.
- Facilities storing or utilizing this material should be equipped with an eyewash and a safety shower.
- Wash thoroughly after handling.

**8.2.3 Environmental Exposure Controls:**
No data available.

### 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.
- **Autoignition Pt:**
  - No data.
- **Explosive Properties:**
  - No data available.
- **Oxidizing Properties:**
  - No data available.

**9.2 Other Information**

- **Percent Volatile:**
  - No data.
- **Formula:**
  - C284H432N84O79S7
- **Molecular Weight:**
  - 6511.40

### 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.
SAFETY DATA SHEET
Aprotinin

10.4 Conditions To Avoid: No data available.

10.3 Polymerization: Will occur [ ] Will not occur [ X ]

10.5 Incompatibility - Materials To Avoid: No data available.

10.6 Hazardous Decomposition Or Byproducts: carbon dioxide
carbon monoxide
nitrogen oxides
sulfur oxides

Section 11. Toxicological Information

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

Aprotinin - Toxicity Data: Intraperitoneal TDLo (mouse): 8 mg/kg; Intravenous TDLo (rat): 4 mg/kg;

Chronic Toxicological Effects: Aprotinin - 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.
Aprotinin RTECS Number: YN5080000

<table>
<thead>
<tr>
<th>Hazardous Components (Chemical Name)</th>
<th>CAS #</th>
<th>NTP</th>
<th>IARC</th>
<th>ACGIH</th>
<th>OSHA</th>
</tr>
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<tbody>
<tr>
<td>1. Aprotinin 9087-70-1</td>
<td>n.a.</td>
<td>n.a</td>
<td>n.a</td>
<td>n.a</td>
<td>n.a</td>
</tr>
</tbody>
</table>

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 (European ADR/RID) Not dangerous goods.

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

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

Section 15. Regulatory Information

European Community Hazard Symbol codes Xi: Irritant

European Community Risk and Safety Phrases
R42/43 - May cause sensitization by inhalation and skin contact.
S22 - Do not breathe dust.
S24/25 - Avoid contact with skin and eyes.
S28A - After contact with skin, wash immediately with plenty of water.
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. Aprotinin 9087-70-1</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

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. Aprotinin 9087-70-1</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>
Regulatory Information Statement: This SDS was prepared in accordance with Regulation (EC) No.1272/2008 and European Directive 67/548/EEC as amended.

Section 16. Other Information

Revision Date: 08/12/2013

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