SAFETY DATA SHEET
Abacavir (sulfate)

according to Regulation (EC) No. 1907/2006 as amended by (EC) No. 1272/2008

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

1.1 Product Code: 14746
   Product Name: Abacavir (sulfate)
   Synonyms: 4-[2-amino-6-(cyclopropylamino)-9H-purin-9-yl]-(1S,4R)-2-cyclopentene-1-methanol sulfate;

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
   1180 E. Ellsworth Rd.
   Ann Arbor, MI  48108
   Web site address: www.caymanchem.com
   Information: +1  (734)971-3335

1.4 Emergency telephone number:
   Emergency Contact: CHEMTREC Within USA and Canada: +1 (800)424-9300
   CHEMTREC Outside USA and Canada: +1 (703)527-3887

Section 2. Hazards Identification

2.1 Classification of the Substance or Mixture:
   2.1.1 Classification according to Regulation (EC) No 1272/2008 [CLP]:
   Skin Corrosion/Irritation, Category 2
   Serious Eye Damage/Eye Irritation, Category 2
   Skin Sensitization, Category 1
   Target Organ Systemic Toxicity (single exposure), Category 3

   2.1.2 Classification according to Directive 1999/45/EC:
   Xi: Irritant
   Risk Phrases: R36/37/38, R43
   For full text of R- phrases: see SECTION 15.

2.2 Label Elements:
   2.2.1 Labeling according to Regulation (EC) No 1272/2008 [CLP]:

   GHS Signal Word: Warning
   GHS Hazard Phrases:
   H315: Causes skin irritation.
   H319: Causes serious eye irritation.
   H317: May cause an allergic skin reaction.
   H335: May cause respiratory irritation.
   GHS Precaution Phrases:
   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.
   P261: Avoid breathing {dust/fume/gas/mist/vapours/spray}.
   P272: Contaminated work clothing should not be allowed out of the workplace.
   GHS Response Phrases:
   P302+352: IF ON SKIN: Wash with plenty of soap and water.
   P332+313: If skin irritation occurs, get medical advice/attention.
P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337+313: If eye irritation persists, get medical advice/attention.
P333+313: If skin irritation or rash occurs, seek medical advice/attention.
P309+311: Call a POISON CENTER or doctor/physician if exposed or you feel unwell.
P304+340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

GHS Storage and Disposal Phrases:
Please refer to Section 7 for Storage and Section 13 for Disposal information.

2.2.2 Labeling according to Directive 1999/45/EC:

Xi

2.3 Adverse Human Health Causes skin irritation.

Effects and Symptoms: Causes serious eye irritation.
Material may be irritating to the mucous membranes and upper respiratory tract.
May be harmful by inhalation, ingestion, or skin absorption.
May cause an allergic skin reaction.
May cause respiratory irritation.
To the best of our knowledge, the toxicological properties have not been thoroughly investigated.

Section 3. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>CAS # / RTECS #</th>
<th>Hazardous Components (Chemical Name)/REACH Registration No.</th>
<th>Concentration</th>
<th>EC No./EC Index No.</th>
<th>Risk Phrases/ GHS Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>216699-07-9 NA</td>
<td>Abacavir (sulfate)</td>
<td>100.0 %</td>
<td>NA</td>
<td>Xi; R36/37/38-43</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Skin Corr. 2: H315</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Eye Damage 2: H319</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>TOST (SE) 3: H335 H336</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Skin Sens. 1: H317</td>
</tr>
</tbody>
</table>

Section 4. First Aid Measures

4.1 Description of First Aid No data available.

Measures:

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

In Case of Skin Contact: Immediately wash skin with soap and plenty of water for at least 15 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.

In Case of Eye Contact: Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Have eyes examined and tested by medical personnel.

In Case of Ingestion: Wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. Do NOT induce vomiting unless directed to do so by medical personnel.
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Section 5. Fire Fighting Measures

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

5.2 Flammable Properties and Hazards:
Flash Pt: No data.
Explosive Limits: LEL: No data. UEL: No data.
Autoignition Pt: No data.

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.

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.

Section 7. Handling and Storage

7.1 Precautions To Be Taken in Handling: Avoid breathing dust/fume/gas/mist/vapours/spray.

7.2 Precautions To Be Taken in Storing: Keep container tightly closed.

Section 8. Exposure Controls/Personal Protection

8.1 Exposure Parameters:

<table>
<thead>
<tr>
<th>CAS #</th>
<th>Partial Chemical Name</th>
<th>Britain EH40</th>
<th>France VL</th>
<th>Europe</th>
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</thead>
<tbody>
<tr>
<td>216699-07-9</td>
<td>Abacavir (sulfate)</td>
<td>No data.</td>
<td>No data.</td>
<td>No data.</td>
</tr>
</tbody>
</table>

8.2 Exposure Controls:

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 Personal protection equipment:
Eye Protection: Safety glasses
Protective Gloves: Compatible chemical-resistant gloves
Other Protective Clothing: Lab coat
Respiratory Equipment: 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
Section 9. Physical and Chemical Properties

9.1 Information on Basic Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Physical States:</th>
<th>[ ] Gas</th>
<th>[ ] Liquid</th>
<th>[ X ] Solid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance and Odor:</td>
<td>A crystalline solid</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Melting Point:</td>
<td>No data.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Boiling Point:</td>
<td>No data.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flash Pt:</td>
<td>No data.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evaporation Rate:</td>
<td>No data.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Explosive Limits:</td>
<td>LEL: No data.                                    UEL: No data.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vapor Pressure (vs. Air or mm Hg):</td>
<td>No data.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vapor Density (vs. Air = 1):</td>
<td>No data.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specific Gravity (Water = 1):</td>
<td>No data.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Solubility in Water:</td>
<td>No data.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Solubility Notes:</td>
<td>~1 mg/ml in PBS (pH 7.2); ~0.15 mg/ml in DMSO;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Autoignition Pt:</td>
<td>No data.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

9.2 Other Information

| Molecular Formula & Weight: | C14H18N6O • H2SO4 384.4 |

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: activated carbon peroxides strong acids strong bases strong oxidizing agents
10.6 Hazardous Decomposition Or Byproducts: carbon dioxide carbon monoxide
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Section 11. Toxicological Information

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

Carcinogenicity: NTP? No IARC Monographs? No OSHA Regulated? No

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.
DOT Hazard Class: UN/NA Number:

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

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

EPA SARA (Superfund Amendments and Reauthorization Act of 1986) Lists

<table>
<thead>
<tr>
<th>CAS #</th>
<th>Hazardous Components (Chemical Name)</th>
<th>S. 302 (EHS)</th>
<th>S. 304 RQ</th>
<th>S. 313 (TRI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>216699-07-9</td>
<td>Abacavir (sulfate)</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CAS #</th>
<th>Hazardous Components (Chemical Name)</th>
<th>Other US EPA or State Lists</th>
</tr>
</thead>
<tbody>
<tr>
<td>216699-07-9</td>
<td>Abacavir (sulfate)</td>
<td>CAA HAP, ODC: No; CWA NPDES: No; TSCA: No; CA PROP.65: No</td>
</tr>
</tbody>
</table>

European Community Hazard Symbol codes:

![Xi]

European Community Risk and Safety Phrases:

R36/37/38 Irritating to eyes, respiratory system and skin.
R43 May cause sensitization by skin contact.
S22 Do not breathe dust.
S24/25 Avoid contact with skin and eyes.
S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
Regulatory Information: 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: 03/12/2014

Additional Information About This Product: No data available.

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