1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifiers

Product Name: Leptomycin B
Catalog Number: 1987
CAS Number: 87081-35-4
IUPAC Name: (2E,5S,6R,7S,9R,10E,12E,15R,16Z,18E)-19-[(2S,3S)-3,6-Dihydro-3-methyl-6-oxo-2H-pyran-2-yl]-17-ethyl-6-hydroxy-3,5,7,9,11,15-hexamethyl-8-oxo-2,10,12,16,18-nonadecapentaenoic acid

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

Identified Uses: Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

Company: Tocris Bioscience
The Watkins Building, Atlantic Road, Bristol, BS11 9QD, UK
Telephone: + 44 (0)117 916-3333
Fax: + 44 (0)117 916-3344
Internet: www.tocris.com
E-mail address: info@bio-techne.com

1.4 Emergency Telephone number

For chemical emergency spill, leak, fire, exposure, or accident call CHEMTREC day or night:
Within USA and Canada: 1-800-424-9300. Outside USA and Canada: +1 703-527-3887 (collect calls accepted).

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 [GHS/CLP]
Flammable liquids - Category 2

2.2 Label elements

Labeling according to Regulation (EC) No 1272/2008 [CLP]

Pictogram(s):

Signal word: Danger
Hazard statement(s):
H225 Highly Flammable liquid and vapour
Precautionary statement(s):
P280 Wear protective gloves/protective clothing/eye protection/face protection
P303+361+353 IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower

2.3 Other hazards - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

Hazardous ingredients according to Regulation (EC) No 1272/2008

<table>
<thead>
<tr>
<th>Component</th>
<th>Cas No.</th>
<th>EC No.</th>
<th>Index No.</th>
<th>Classification</th>
<th>Conc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethanol</td>
<td>64-17-5</td>
<td>200-578-6</td>
<td>603-002-00-5</td>
<td>R11 H225</td>
<td>&gt;99% (w/v)</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice
Consult a doctor and show this safety data sheet.

If inhaled
Remove to fresh air and monitor breathing. If breathing becomes difficult, give oxygen. If breathing stops, give artificial respiration. Consult a doctor.

In case of skin contact
Immediately wash skin with copious amounts of soap and water for at least 15 minutes. Remove contaminated clothing and shoes and wash before reuse. Consult a doctor.

In case of eye contact
Flush with copious amounts of water for at least 15 minutes. Consult a doctor.

If swallowed
Rinse mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Consult a doctor.

### 4.2 Most important symptoms and effects, both acute and delayed
To the best of our knowledge, the chemical, physical and toxicological properties have not been thoroughly investigated.

### 4.3 Indication of immediate medical attention and special treatment needed
Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

---

### 5. FIRE-FIGHTING MEASURES

#### 5.1 Extinguishing media
**Suitable extinguishing media**
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

#### 5.2 Special hazards arising from the substance or mixture
In combustion, may emit toxic fumes.

#### 5.3 Precautions for fire-fighters
Wear suitable protective clothing to prevent contact with skin and eyes and self-contained breathing apparatus.

---

### 6. ACCIDENTAL RELEASE MEASURES

#### 6.1 Personal precautions, protective equipment and emergency procedures
Do not take action without suitable protective clothing - see section 8 of SDS. Evacuate personnel to safe areas. Ensure adequate ventilation. Avoid breathing vapors, mist, dust or gas.

#### 6.2 Environmental precautions
Do not let product enter drains.

#### 6.3 Methods and materials for containment and cleaning up
Cover spillage with suitable absorbent material. Sweep up material and place in an appropriate container. Hold all material for appropriate disposal as described under section 13 of SDS.

#### 6.4 Reference to other sections
For required PPE see section 8. For disposal see section 13.

---

### 7. HANDLING AND STORAGE

#### 7.1 Precautions for safe handling
Use in a chemical fume hood, with air supplied by an independent system. Avoid inhalation, contact with eyes, skin and clothing. Avoid the formation of dust and aerosols. Use in a well-ventilated area. Keep away from sources of ignition. Avoid prolonged or repeated exposure.

#### 7.2 Conditions for safe storage, including any incompatibilities.
Store in cool, well-ventilated area. Keep away from direct sunlight. Keep container tightly sealed until ready for use. Recommended storage temperature: Desiccate at -20°C

#### 7.3 Specific end uses
Use in a laboratory fume hood where possible. Refer to employer's COSHH risk assessment.

---

### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### 8.1 Control parameters

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS No.</th>
<th>8 Hour TWA (ppm)</th>
<th>15 min STEL (mg.m⁻³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethanol</td>
<td>64-17-5</td>
<td>1000</td>
<td>1920</td>
</tr>
</tbody>
</table>

#### 8.2 Exposure controls
**Appropriate engineering controls**
Use in a fume hood where applicable. Ensure all engineering measures described under section 7 of SDS are in place. Ensure laboratory is equipped with a safety shower and eye wash station.

**Personal protective equipment**

**Eye/face protection**
Use appropriate safety glasses.

**Skin protection**
Use appropriate chemical resistant gloves (minimum requirement use standard BS EN 374:2003). Gloves should be inspected before use. Wash and dry hands thoroughly after handling.

**Body protection**
Wear appropriate protective clothing.

**Respiratory protection**
If risk assessment indicates necessary, use a suitable respirator.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

#### 9.1 Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Colourless solution</td>
</tr>
<tr>
<td>Odor</td>
<td>No data available</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting / freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling point / range</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash point</td>
<td>No data available</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>No data available</td>
</tr>
<tr>
<td>Upper / lower flammability or</td>
<td>No data available</td>
</tr>
<tr>
<td>explosive limits</td>
<td>No data available</td>
</tr>
</tbody>
</table>

#### 9.2 Other safety information
No data available

### 10. STABILITY AND REACTIVITY

#### 10.1 Reactivity
Stable under recommended transport or storage conditions.

#### 10.2 Chemical stability
Stable under recommended storage conditions.

#### 10.3 Possibility of hazardous reactions
Hazardous reactions will not occur under normal transport or storage conditions. Decomposition may occur on exposure to conditions or materials listed below.

#### 10.4 Conditions to avoid
Heat, moisture.

#### 10.5 Incompatible materials
Strong acids/alkalis, strong oxidising/reducing agents.

#### 10.6 Hazardous decomposition products
In combustion may emit toxic fumes. No known decomposition information.

### 11. TOXICOLOGICAL INFORMATION

#### 11.1 Information on toxicological effects

<table>
<thead>
<tr>
<th>Category</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Acute Toxicity</strong></td>
<td>(Data refers to ethanol): RAT-ORL LD50: 7060mg/kg; RAT-IPR LD50: 3600ug/kg; RAT-IVN LD50: 1440mg/kg; RAT-IAT LD50: 11mg/kg; MUS-ORL LD50: 3450mg/kg; IPR-MUS LD50: 528mg/kg; SCU-MUS LD50: 1973mg/kg; MUS-IVN LD50: 1973mg/kg</td>
</tr>
<tr>
<td><strong>Skin corrosion/irritation</strong></td>
<td>Classified based on available data</td>
</tr>
<tr>
<td><strong>Serious eye damage/irritation</strong></td>
<td>Classified based on available data</td>
</tr>
<tr>
<td><strong>Respiratory or skin sensitization</strong></td>
<td>Classified based on available data</td>
</tr>
<tr>
<td><strong>Germ cell mutagenicity</strong></td>
<td>Classified based on available data</td>
</tr>
<tr>
<td><strong>Carcinogenicity</strong></td>
<td>Classified based on available data</td>
</tr>
<tr>
<td><strong>Reproductive toxicity</strong></td>
<td>Classified based on available data</td>
</tr>
<tr>
<td><strong>Specific target organ toxicity - single exposure</strong></td>
<td>Classified based on available data</td>
</tr>
<tr>
<td><strong>Specific target organ toxicity - repeated exposure</strong></td>
<td>Classified based on available data</td>
</tr>
</tbody>
</table>
### 12. ECOLOGICAL INFORMATION

#### 12.1 Toxicity
No data available

#### 12.2 Persistence and degradability
No data available

#### 12.3 Bioaccumulative potential
No data available

#### 12.4 Mobility in soil
No data available

#### 12.5 Results of PBT and vPvB assessment
No data available

#### 12.6 Other adverse effects
No data available

### 13. DISPOSAL CONSIDERATIONS

#### 13.1 Waste treatment methods

**Product**
Transfer to a suitable container and arrange for collection by specialized disposal company in accordance with National legislation.

**Contaminated packaging**
Dispose of in a regulated landfill site or other method for hazardous or toxic wastes in accordance with National legislation.

### 14. TRANSPORT INFORMATION

Classified according to the criteria of the UN Model Regulations as reflected in the IMDG Code, ADR, RID and IATA.

#### 14.1 UN-Number
UN1170

#### 14.2 UN proper shipping name
Ethanol Solution

#### 14.3 Transport hazard class(es)
3

#### 14.4 Packaging group
II

#### 14.5 Environmental hazards
This product is not classified as environmentally hazardous according to the UN Model Regulations, nor a marine pollutant according to the IMDG Code.

#### 14.6 Special precautions for users
No data available

### 15. REGULATORY INFORMATION

This safety datasheet complies with the requirements of Regulation (EC) No. 453/2010.

#### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
No data available
15.2 Chemical safety assessment
A Chemical Safety Assessment has not been made for this product.

16. OTHER INFORMATION

Further Information
Copyright © 2020 Tocris Bioscience. This company shall not be held liable for any damage resulting from handling or from contact with the above product. This material must only be handled by suitably qualified experienced scientists in appropriately equipped and authorized facilities. The above information is believed to be correct but does not purport to be all inclusive and should be used as a guide only for experienced personnel. Always consult your safety advisor and follow appropriate local and national safety legislature. The absence of warning must not, under any circumstance, be taken to mean that no hazard exists.

End of safety data sheet