1 Product and Company Identification

1.1 Product Name: Zebularine
1.2 Catalog Number: 72902
1.3 Synonyms: NSC 309132; 1-[(2R,3R,4S,5R)-3,4-dihydroxy-5-(hydroxymethyl)oxolan-2-yl]pyrimidin-2-one
1.4 Product Use: Laboratory Chemical
1.5 Manufacturer/Supplier: STEMCELL Technologies Suite 500-1618 Station Street Vancouver, British Columbia V6A 1B6 Canada
1.6 In Case of Emergency Call: 1-800-667-0322

2 Hazards Identification

2.1 Classification of the substance or mixture
Not a hazardous substance or mixture.

2.2 Label elements
Pictogram
No data available
Signal word
No data available
Hazard statement(s)
Based on evaluation of currently available data this substance or mixture is not classifiable according to GHS.
Precautionary statement(s)
No data available

2.3 Other hazards
No data available

3 Composition / Information on Ingredients

<table>
<thead>
<tr>
<th>Hazardous Components (Chemical Name)</th>
<th>CAS #</th>
<th>Concentration</th>
<th>EC #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zebularine</td>
<td>3690-10-6</td>
<td>100%</td>
<td>N/A</td>
</tr>
</tbody>
</table>

4 First Aid Measures

4.1 Description of first aid measures
4.1.1 If inhaled
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 If swallowed
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.

4.2 Most important symptoms and effects, both acute and delayed
The toxicological properties of this product have not been fully evaluated.

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

5 Fire Fighting Measures

5.1 Extinguishing Media

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

5.1.2 Unsuitable Extinguishing Media
A solid water stream may be inefficient.

5.2 Special hazards arising from the substance or mixture

5.2.1 Flammable Properties and Hazards
No data available

5.2.2 Flash Pt
No data available

5.2.3 Autoignition Pt
No data available

5.2.4 Explosive Limits
LEL: No data available  UEL: No data available

5.2.5 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.

6 Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures
Avoid raising and breathing dust, and provide adequate ventilation.
As conditions warrant, wear a NIOSH approved (or equivalent) 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 materials for containment and cleaning up
Contain spill and collect, as appropriate.
Transfer to a chemical waste container for disposal in accordance with local regulations.

7 Handling and Storage
7.1 Precautions for safe handling
Avoid breathing dust/fume/gas/mist/vapours/spray.
Avoid prolonged or repeated exposure.

7.2 Conditions for safe storage
Keep container tightly closed.
Store in accordance with information listed on the product insert.

8 Exposure Controls/Personal Protection
8.1 Exposure limits

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS #</th>
<th>Value</th>
<th>Control parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zebrularine</td>
<td>3690-10-6</td>
<td>No data available</td>
<td>No data available</td>
</tr>
</tbody>
</table>

8.2 Engineering controls
Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

8.3 Personal protective equipment
8.3.1 Eye/face protection
Safety glasses

8.3.2 Skin protection
Compatible chemical-resistant gloves
Lab coat

8.3.3 Respiratory protection
NIOSH (US) or CEN (EU) approved respirator, as conditions warrant.

8.3.4 General hygiene considerations
Do not take internally.
Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.
Wash thoroughly after handling.

8.3.5 Environmental exposure controls
No data available
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>A crystalline solid</td>
</tr>
<tr>
<td>Odour</td>
<td>No data available</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling point/boiling range</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative density</td>
<td>No data available</td>
</tr>
<tr>
<td>Solubility in water</td>
<td>No data available</td>
</tr>
<tr>
<td>Solubility in other liquids</td>
<td>~10 mg/mL in PBS (pH 7.2); ~0.25 mg/mL in EtOH; ~14 mg/mL in DMSO; ~5 mg/mL in DMF</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapour density</td>
<td>No data available</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash point</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 explosive limits</td>
<td>No data available</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>No data available</td>
</tr>
</tbody>
</table>

9.2 Other information

- Molecular formula: C₉H₁₂N₂O₅
- Molecular weight: 228.2

10 Stability and Reactivity

10.1 Reactivity                                | No data available                          |
10.2 Chemical stability                        | Stable                                     |
10.3 Possibility of hazardous reactions        | No data available                          |
10.4 Conditions to avoid                       | No data available                          |
10.5 Incompatible materials                   | Strong oxidizing agents                   |
10.6 Hazardous decomposition products          | Carbon dioxide                             |
                                           | Carbon monoxide                            |
                                           | Nitrogen oxides                            |
11.2 **Skin corrosion/irritation**  
No data available

11.3 **Serious eye damage/eye irritation**  
No data available

11.4 **Aspiration hazard**  
No data available

11.5 **Specific target organ toxicity - single exposure**  
No data available

11.6 **Specific target organ toxicity - repeated exposure**  
No data available

11.7 **Respiratory and/or skin sensitization**  
No data available

11.8 **Carcinogenicity**  
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

11.9 **Reproductive toxicity**  
No data available

11.10 **Germ cell mutagenicity**  
No data available

11.11 **Signs and symptoms of exposure**  
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

11.12 **RTECS #** UW7539720

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12 **Ecological Information**

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

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 **Other adverse effects**  
No data available

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13 **Disposal Considerations**

13.1 **Waste disposal method**  
Dispose in accordance with local, provincial/state, and federal regulations.
Safety Data Sheet

ZEBULARINE

EFFECTIVE DATE: 2014-11-21

14 Transport Information

14.1 UN number
No data available

14.2 UN proper shipping name
DOT Not dangerous goods
ADR/RID Not dangerous goods
IMDG Not dangerous goods
IATA Not dangerous goods

14.3 Transport hazard class(es)
No data available

14.4 Packing group
No data available

14.5 Environmental hazards
No data available

14.6 Special precautions
No data available

15 Regulatory Information

15.1 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>
</tr>
</thead>
<tbody>
<tr>
<td>Zebularine</td>
<td>3690-10-6</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

15.2 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>Zebularine</td>
<td>3690-10-6</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

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

15.4 WHMIS Classification
Not WHMIS controlled

16 Other Information

16.1 Prepared by: Quality Control, STEMCELL Technologies Inc.

16.2 Revision: N/A

16.3 Notice: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. STEMCELL Technologies Inc. shall not be held liable for any damage resulting from handling or from contact with the product. The information contained in this Safety Data Sheet (SDS) is current as of the Effective Date shown in this document and may be subject to amendment by STEMCELL Technologies Inc.

16.4 Disclaimer: THIS PRODUCT IS FOR RESEARCH USE ONLY. NOT INTENDED FOR HUMAN OR ANIMAL DIAGNOSTIC OR THERAPEUTIC USES.