1 Product and Company Identification

1.1 Product Name: Cyclopamine

1.2 Catalog Number: 72072, 72074

1.3 Synonyms: 11-Deoxojervine, Jervine; (2′R,3S,3′R,3′aS,6′S,6aS,6bS,7′aR,11aS,11bR)-1,2,3,3′a,4,4′,5′,6,6′,6a,6b,7,7′,7′a,8,11,11a,11b-octadecahydro-3′,6′,10,11b-tetramethyl-spiro[9H-benzo[a]fluorene-9,2′(3′H)-furo[3,2-b]pyridine]-3-ol

1.4 Product Use: Hedgehog pathway inhibitor, inhibits Smoothened

1.5 Manufacturer/Supplier: STEMCELL Technologies SARL
40 rue des Berges, Miniparc Polytec, Bât. Sirocco,
38000 Grenoble, France

1.6 In Case of Emergency Call: +33.(0).4.76.04.75.30

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>Cyclopamine</td>
<td>4449-51-8</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>Cyclopamine</td>
<td>4449-51-8</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
Appearance: A crystalline solid
Safety Data Sheet

CYCLOPAMINE

Odour: No data available
Odour threshold: No data available
Melting point/freezing point: No data available
Boiling point/boiling range: No data available
Decomposition temperature: No data available
Relative density: No data available
Solubility in water: No data available
Solubility in other liquids: ~0.25 mg/mL in 1:3 EtOH:PBS (pH 7.2); ~10 mg/mL in EtOH; ~2 mg/mL in DMF

pH: No data available
Partition coefficient: n-octanol/water: No data available
Viscosity: No data available
Vapour pressure: No data available
Vapour density: No data available
Evaporation rate: No data available
Flash point: No data available
Flammability (solid, gas): No data available
Upper/lower flammability or explosive limits: No data available
Auto-ignition temperature: No data available

9.2 Other information
Molecular formula: C_{27}H_{41}NO_2
Molecular weight: 411.60

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 Toxicological Information
11.1 Acute toxicity: No data available
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.
ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
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 # GY0750000

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

13 Disposal Considerations

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

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>
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<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>
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<tbody>
<tr>
<td>Cyclopamine</td>
<td>4449-51-8</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
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</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>
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</thead>
<tbody>
<tr>
<td>Cyclopamine</td>
<td>4449-51-8</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.

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 Date Prepared shown in Section 1.7 of 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.