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

Product identifier

Product Name: Cyclopamine

Catalog Number: 72072 72074

UN/ID no.: UN2811

Document Number: DX21078

Synonyms: 11-Deoxojervine; Jervine; (2'R,3S,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]pyridin]-3-ol

Recommended use of the chemical and restrictions on use

Recommended Use: Laboratory chemicals

Details of the supplier of the safety data sheet

Manufacturer/Supplier: STEMCELL Technologies Canada Inc.
Suite 500 - 1618 Station Street
Vancouver, British Columbia V6A 1B6 Canada

Emergency telephone number

Emergency Telephone: 1-800-667-0322

2. HAZARDS IDENTIFICATION

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

<table>
<thead>
<tr>
<th>Hazard</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity - Oral</td>
<td>Category 3</td>
</tr>
<tr>
<td>Germ cell mutagenicity</td>
<td>Category 2</td>
</tr>
<tr>
<td>Reproductive toxicity</td>
<td>Category 1B</td>
</tr>
</tbody>
</table>

Hazard not otherwise classified (HNOC)
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Not applicable

Label elements

Danger

Hazard statements
Toxic if swallowed
Suspected of causing genetic defects
May damage fertility or the unborn child

Appearance: Crystalline
Physical state: Solid
Odor: No data available

Precautionary Statements - Prevention
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Wear protective gloves/protective clothing/eye protection/face protection
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product

Precautionary statements - Response
IF exposed or concerned: Get medical advice/attention
IF SWALLOWED: Immediately call a POISON CENTER or doctor
Rinse mouth

Precautionary Statements - Storage
Store locked up

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant

Other Information
Not applicable

Unknown acute toxicity
100 % of the mixture consists of ingredient(s) of unknown toxicity
0 % of the mixture consists of ingredient(s) of unknown acute oral toxicity
100 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity
100 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)
100 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)
100 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)
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3. COMPOSITION/INFOMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Substance</th>
<th>Synonyms</th>
<th>Chemical name</th>
<th>CAS No.</th>
<th>Weight-%</th>
</tr>
</thead>
<tbody>
<tr>
<td>11-Deoxojervine; Jervine;</td>
<td>(2'R,3'S,3'aS,6'S,6aS,6bS,7'aR,11aS,11bR)-1,2,3,3'a,4,4',5',6',6'a,6b,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]pyridin]-3-ol.</td>
<td>11-deoxojervine</td>
<td>4449-51-8</td>
<td>100</td>
</tr>
</tbody>
</table>

*The exact percentage (concentration) of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

**Description of first aid measures**

**General advice**

Show this safety data sheet to the doctor in attendance.

**Inhalation**

Remove to fresh air.

**Eye contact**

Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.

**Skin contact**

Wash skin with soap and water.

**Ingestion**

Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Get medical attention.

**Most important symptoms and effects, both acute and delayed**

**Symptoms**

No information available.

**Indication of any immediate medical attention and special treatment needed**

**Note to physicians**

Treat symptomatically.

5. FIRE-FIGHTING MEASURES

**Suitable Extinguishing Media**

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media

CAUTION: Use of water spray when fighting fire may be inefficient.

Specific hazards arising from the chemical

No information available.

Explosion data

Sensitivity to Mechanical Impact: None.
Sensitivity to Static Discharge: None.

Special protective equipment for fire-fighters

Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions

Ensure adequate ventilation.

Environmental precautions

Environmental precautions

See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for containment

Prevent further leakage or spillage if safe to do so.

Methods for cleaning up

Pick up and transfer to properly labeled containers.

Prevention of secondary hazards

Clean contaminated objects and areas thoroughly observing environmental regulations.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling

Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Remove contaminated clothing and shoes.

Conditions for safe storage, including any incompatibilities

Storage Conditions

Keep out of the reach of children. Store locked up. Store in accordance with information listed on the Product Information Sheet (PIS).
8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Limits
The following ingredients are the only ingredients of the product above the cut-off level (or level that contributes to the hazard classification of the mixture) which have an exposure limit applicable in the region for which this safety data sheet is intended or other recommended limit. At this time, the other relevant constituents have no known exposure limits from the sources listed here.

Appropriate engineering controls

Engineering controls
Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection
No special protective equipment required.

Hand protection
Wear suitable gloves.

Skin and body protection
Wear suitable protective clothing.

Respiratory protection
No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

General hygiene considerations
Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state
Solid

Appearance
Crystalline

Color
No information available

Odor
No data available

Odor threshold
No data available
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**Property** | **Values** | **Remarks • Method**
---|---|---
pH | No data available | None known
Melting point / freezing point | No data available | None known
Boiling point / boiling range | No data available | None known
Flash point | No data available | None known
Evaporation rate | No data available | None known
Flammability (solid, gas) | Product is not flammable. | None known
Flammability Limit in Air
  Upper flammability limit: | No data available | None known
  Lower flammability limit: | No data available | None known
Vapor pressure | No data available | None known
Vapor density | No data available | None known
Relative density | No data available | None known
Water solubility | No data available | None known
Solubility in other solvents | DMF: 2 mg/mL; Ethanol: 10 mg/mL; Ethanol:PBS (pH 7.2) (1:3): 0.25 mg/mL | None known
Partition coefficient | No data available | None known
Autoignition temperature | No data available | None known
Decomposition temperature | No data available | None known
Kinematic viscosity | No data available | None known
Dynamic viscosity | No data available | None known
Explosive properties | No data available | None known
Oxidizing properties | No data available | None known

**Other Information**

Softening point | No information available
Molecular weight | 411.6
Molecular formula | C27H41NO2
VOC Content (%) | No information available
Liquid Density | No information available
Bulk density | No information available

**10. STABILITY AND REACTIVITY**

Reactivity | No information available.
Chemical stability | Stable under recommended transport or storage conditions.
Possibility of hazardous reactions | None under normal processing.
Hazardous polymerization | Hazardous polymerization does not occur.
Conditions to avoid | None known based on information supplied.
Incompatible materials | Strong oxidizing agents.
Hazardous decomposition products | Carbon dioxide (CO2). Carbon monoxide. Nitrogen oxides (NOx).
11. TOXICOLOGICAL INFORMATION

**Information on likely routes of exposure**

**Product Information**

<table>
<thead>
<tr>
<th>Route</th>
<th>Specific test data for the substance or mixture is not available.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inhalation</td>
<td></td>
</tr>
<tr>
<td>Eye contact</td>
<td></td>
</tr>
<tr>
<td>Skin contact</td>
<td></td>
</tr>
<tr>
<td>Ingestion</td>
<td>Specific test data for the substance or mixture is not available. Toxic if swallowed. (based on components).</td>
</tr>
</tbody>
</table>

**Symptoms related to the physical, chemical and toxicological characteristics**

<table>
<thead>
<tr>
<th>Symptom</th>
<th>No information available.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin corrosion/irritation</td>
<td></td>
</tr>
<tr>
<td>Serious eye damage/eye irritation</td>
<td></td>
</tr>
<tr>
<td>Respiratory or skin sensitization</td>
<td></td>
</tr>
</tbody>
</table>

**Numerical measures of toxicity**

**Acute toxicity**

The following values are calculated based on chapter 3.1 of the GHS document

<table>
<thead>
<tr>
<th>ATEmix (oral)</th>
<th>100.0000000000 mg/kg</th>
</tr>
</thead>
</table>

**Unknown acute toxicity**

| 100 % of the mixture consists of ingredient(s) of unknown toxicity |
| 0 % of the mixture consists of ingredient(s) of unknown acute oral toxicity |
| 100 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity |
| 100 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas) |
| 100 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor) |
| 100 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist) |

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

<table>
<thead>
<tr>
<th>Skin corrosion/irritation</th>
<th>No information available.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serious eye damage/eye irritation</td>
<td>No information available.</td>
</tr>
<tr>
<td>Respiratory or skin sensitization</td>
<td>No information available.</td>
</tr>
</tbody>
</table>
## Germ cell mutagenicity
Classification based on data available for ingredients. Contains a known or suspected mutagen.

### Reproductive toxicity
Classification based on data available for ingredients.

### STOT - single exposure
No information available.

### STOT - repeated exposure
No information available.

### Aspiration hazard
No information available.

### RTECS #
GY0750000

## 12. ECOLOGICAL INFORMATION

### Ecotoxicity
The environmental impact of this product has not been fully investigated.

### Persistence and degradability
No information available.

### Bioaccumulation
There is no data for this product.

### Other adverse effects
No information available.

## 13. DISPOSAL CONSIDERATIONS

### Waste treatment methods
Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

### Contaminated packaging
Do not reuse empty containers.
14. TRANSPORT INFORMATION

Note: Transport in accordance with local, state, and federal regulations. When sold in quantities of less than or equal to 1 mL, or 1 g, with an Excepted Quantity Code of E1, E2, E4, or E5, this item meets the De Minimis Quantities exemption, per IATA 2.6.10. Therefore packaging does not have to be labeled as Dangerous Goods/Excepted Quantity.

DOT

- UN/ID no.: UN2811
- Proper shipping name: Toxic solids, organic, n.o.s. (Cyclopamine)
- Hazard class: 6.1 Toxic substances
- Packing Group: III

TDG

- Not regulated

MEX

- Not regulated

ICAO (air)

- Not regulated

IATA

- UN Number: UN2811
- UN proper shipping name: Toxic solid, organic, n.o.s. (Cyclopamine)
- Transport hazard class(es): 6.1 Toxic substances
- Packing Group: III

IMDG

- UN Number: UN2811
- UN proper shipping name: TOXIC SOLID, ORGANIC, N.O.S. (Cyclopamine)
- Transport hazard class(es): 6.1 Toxic substances
- Packing Group: III

15. REGULATORY INFORMATION

International Inventories

- TSCA: Does not comply
- DSL/NDSL: Does not comply
- EINECS/ELINCS: Does not comply
- ENCS: Does not comply
- IECSC: Does not comply
- KECL: Does not comply
- PICCS: Does not comply
- AICS: Does not comply
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Revision Number 3

Legend:
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

US Federal Regulations

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

<table>
<thead>
<tr>
<th>Hazard Category</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute health hazard</td>
<td>Yes</td>
</tr>
<tr>
<td>Chronic Health Hazard</td>
<td>Yes</td>
</tr>
<tr>
<td>Fire hazard</td>
<td>No</td>
</tr>
<tr>
<td>Sudden release of pressure hazard</td>
<td>No</td>
</tr>
<tr>
<td>Reactive Hazard</td>
<td>No</td>
</tr>
</tbody>
</table>

CWA (Clean Water Act)
This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA
This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

US State Regulations

California Proposition 65
This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

US State Regulations
This product does not contain any substances regulated by state right-to-know regulations

U.S. EPA Label Information
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EPA Pesticide Registration Number  Not applicable

16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION

Prepared By,  Quality Control. STEMCELL Technologies Canada Inc.

Revision Date  10-Nov-2022

Revision Note  No information available.

Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. STEMCELL Technologies Inc. shall not be held liable for any damage resulting from handling or from contact with the product.

End of Safety Data Sheet