1 Product and Company Identification

1.1 Product Name: Y-27632 (Dihydrochloride)

1.2 Product Identifier: 4-[(1R)-1-aminoethyl]-N-pyridin-4-ylcyclohexane-1-carboxamide; dihydrochloride

1.3 Catalog Number: 72302, 72304, 72305, 72308

1.4 Synonyms: 4-[(1R)-1-aminoethyl]-N-4-pyridinyl-trans-cyclohexanecarboxamide, dihydrochloride

1.5 Product Use: Rho/ROCK pathway inhibitor; inhibits ROCK

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

1.7 In Case of Emergency Call: 1-800-667-0322

2 Hazards Identification

2.1 Classification of the substance or mixture
Acute Toxicity: Inhalation, Category 4
Acute Toxicity: Oral, Category 4
Acute Toxicity: Skin, Category 4

2.2 Label elements
Pictogram

Signal word Warning
Hazard statement(s)
H332 Harmful if inhaled.
H302 Harmful if swallowed.
H312 Harmful in contact with skin.

Precautionary statement(s)
P261 Avoid breathing {dust/fume/gas/mist/vapours/spray}.
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.
P304+340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P312 Call a {POISON CENTER/doctor/...} if you feel unwell.
P301+312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P330 Rinse mouth.
Safety Data Sheet

Y-27632 (DIHYDROCHLORIDE)  EFFECTIVE DATE: 2015-02-04

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>Y-27632 (Dihydrochloride)</td>
<td>129830-38-2</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
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>Y-27632 (Dihydrochloride)</td>
<td>129830-38-2</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); ~5 mg/mL in EtOH; ~20 mg/mL in DMSO; ~30 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
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
Hydrogen chloride gas
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 # No data available

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>
<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>
<th>Sec.110</th>
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<tbody>
<tr>
<td>Y-27632 (Dihydrochloride)</td>
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<td>No</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>
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<tbody>
<tr>
<td>Y-27632 (Dihydrochloride)</td>
<td>129830-38-2</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>
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.