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

<table>
<thead>
<tr>
<th>Product identifier</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Product Name</strong></td>
<td>Diltiazem hydrochloride</td>
</tr>
<tr>
<td><strong>Product Code</strong></td>
<td>SC-200199</td>
</tr>
</tbody>
</table>

**Recommended use of the chemical and restrictions on use**
For research use only. Not intended for diagnostic or therapeutic use.

<table>
<thead>
<tr>
<th>Details of the supplier of the safety data sheet</th>
<th>Emergency telephone number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Santa Cruz Biotechnology, Inc.</td>
<td>Chemtrec</td>
</tr>
<tr>
<td>10410 Finnell Street</td>
<td></td>
</tr>
<tr>
<td>Dallas, TX 75220</td>
<td>1.800.424.9300 (Within USA)</td>
</tr>
<tr>
<td>831.457.3800</td>
<td>+1.703.527.3887 (Outside USA)</td>
</tr>
<tr>
<td>800.457.3801</td>
<td></td>
</tr>
<tr>
<td><a href="mailto:scbt@scbt.com">scbt@scbt.com</a></td>
<td></td>
</tr>
</tbody>
</table>

2. HAZARDS IDENTIFICATION

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

<table>
<thead>
<tr>
<th>Classification</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Acute toxicity - Oral</strong></td>
<td>Category 4</td>
</tr>
<tr>
<td><strong>Acute toxicity - Dermal</strong></td>
<td>Category 3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Label elements</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Signal word</strong></td>
<td>Danger</td>
</tr>
<tr>
<td><strong>Hazard statements</strong></td>
<td>Harmful if swallowed</td>
</tr>
<tr>
<td><strong>Toxic in contact with skin</strong></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Symbols/Pictograms</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>![Skull and Crossbones]</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Precautionary Statements - Prevention</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Wash face, hands and any exposed skin thoroughly after handling</td>
<td></td>
</tr>
<tr>
<td>Do not eat, drink or smoke when using this product</td>
<td></td>
</tr>
<tr>
<td>Wear protective gloves/protective clothing/eye protection/face protection</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Precautionary Statements - Response</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>IF exposed or concerned: Get medical advice/attention</td>
<td></td>
</tr>
<tr>
<td>IF ON SKIN: Wash with plenty of soap and water</td>
<td></td>
</tr>
<tr>
<td>Call a POISON CENTER or doctor/physician if you feel unwell</td>
<td></td>
</tr>
<tr>
<td>Remove/Take off immediately all contaminated clothing</td>
<td></td>
</tr>
<tr>
<td>Wash contaminated clothing before reuse</td>
<td></td>
</tr>
<tr>
<td>IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell</td>
<td></td>
</tr>
<tr>
<td>Rinse mouth</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Precautionary Statements - Storage</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Store locked up</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Precautionary Statements - Disposal</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Dispose of contents/container to an approved waste disposal plant</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hazards not otherwise classified (HNOC)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hazards not otherwise classified (HNOC)</strong></td>
<td>Not applicable</td>
</tr>
</tbody>
</table>
Other Information

**NFPA**
- Health hazards: 1
- Flammability: 0
- Stability: 0
- Physical and chemical properties: -

**CAS No**
33286-22-5

**Molecular Weight**
451.0

**Formula**
C₂₂H₂₆N₂O₄S•HCl

**Chemical Name**
Diltiazem hydrochloride

**CAS No**
33286-22-5

**Weight %**
>98

**Oral LD₅₀**
= 560 mg/kg (Rat)

**Dermal LD₅₀**
= 271 mg/kg (Rat)

**Inhalation LC₅₀**
-

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No</th>
<th>Weight %</th>
<th>Oral LD₅₀</th>
<th>Dermal LD₅₀</th>
<th>Inhalation LC₅₀</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diltiazem hydrochloride</td>
<td>33286-22-5</td>
<td>&gt;98</td>
<td>= 560 mg/kg (Rat)</td>
<td>= 271 mg/kg (Rat)</td>
<td>-</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

**First Aid Measures**

**General advice**
Immediate medical attention is required. If symptoms persist, call a physician.

**Eye contact**
Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Keep eye wide open while rinsing. Call a physician immediately. If symptoms persist, call a physician.

**Skin Contact**
Immediate medical attention is required. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Wash contaminated clothing before reuse. Wash off immediately with plenty of water. If skin irritation persists, call a physician.

**Inhalation**
Immediate medical attention is required. Remove to fresh air. If not breathing, give artificial respiration. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Artificial respiration and/or oxygen may be necessary. Call a physician. Move to fresh air in case of accidental inhalation of vapors. If symptoms persist, call a physician.

**Ingestion**
Do NOT induce vomiting. Call a physician or poison control center immediately. Never give anything by mouth to an unconscious person. Drink plenty of water. Clean mouth with water and drink afterwards plenty of water. Call a physician.

**Self-protection of the first aider**
Use personal protective equipment as required. Avoid contact with skin, eyes or clothing.

**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**
None.

**Specific hazards arising from the chemical**
Specific hazards arising from the chemical: No information available.

Explosion data
Sensitivity to Mechanical Impact No information available.
Sensitivity to Static Discharge No information available.

Protective equipment and precautions for firefighters
Protective equipment and precautions for firefighters As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures
Personal precautions Use personal protective equipment as required. Keep people away from and upwind of spill/leak. Evacuate personnel to safe areas.

Environmental precautions Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Do not flush into surface water or sanitary sewer system. 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. Cover powder spill with plastic sheet or tarp to minimize spreading. Dike far ahead of liquid spill for later disposal.
Methods for cleaning up Use personal protective equipment as required. Cover powder spill with plastic sheet or tarp to minimize spreading and keep powder dry. Take up mechanically, placing in appropriate containers for disposal. Avoid creating dust. Clean contaminated surface thoroughly. Soak up with inert absorbent material. Dam up. Pick up and transfer to properly labeled containers. Sweep up and shovel into suitable containers for disposal. After cleaning, flush away traces with water. Take precautionary measures against static discharges.

7. HANDLING AND STORAGE

Precautions for safe handling
Advice on safe handling Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. Wash contaminated clothing before reuse. Do not breathe dust/fume/gas/mist/vapors/spray. Do not eat, drink or smoke when using this product. Use with local exhaust ventilation. Handle in accordance with good industrial hygiene and safety practice. Corrosive hazard. Wear protective gloves/clothing and eye/face protection.

Conditions for safe storage, including any incompatibilities
Incompatible materials None known based on information supplied.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters
Exposure Guidelines This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Appropriate engineering controls
Engineering Controls
Showers
Eyewash stations
Ventilation systems

Individual protection measures, such as personal protective equipment
Eye/face protection
Tight sealing safety goggles. Face protection shield.
Skin and Body Protection
Wear protective gloves and protective clothing.
Respiratory protection
If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

General Hygiene Considerations
When using do not eat, drink or smoke. Regular cleaning of equipment, work area and clothing is recommended. Avoid contact with skin, eyes or clothing. Wash hands thoroughly after handling. Keep away from food, drink and animal feeding stuffs.

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical State</td>
<td>Solid</td>
</tr>
<tr>
<td>Appearance</td>
<td>crystalline powder</td>
</tr>
<tr>
<td>Odor</td>
<td>characteristic May be unpleasant</td>
</tr>
<tr>
<td>pH</td>
<td>No information available</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>212 °C</td>
</tr>
<tr>
<td>Boiling point</td>
<td>No information available</td>
</tr>
<tr>
<td>Flash point</td>
<td>No information available</td>
</tr>
<tr>
<td>Density</td>
<td>No information available</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No information available</td>
</tr>
<tr>
<td>Upper flammability limits</td>
<td>No information available</td>
</tr>
<tr>
<td>Lower flammability limit</td>
<td>No information available</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>No information available</td>
</tr>
<tr>
<td>Vapor density</td>
<td>No information available</td>
</tr>
<tr>
<td>Specific gravity</td>
<td>No information available</td>
</tr>
<tr>
<td>Water solubility</td>
<td>No information available</td>
</tr>
<tr>
<td>Solubility in other solvents</td>
<td>No information available</td>
</tr>
<tr>
<td>Partition coefficient</td>
<td>No information available</td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>No information available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No information available</td>
</tr>
<tr>
<td>Kinematic viscosity</td>
<td>No information available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No information available</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>No information available</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

Reactivity                      | Not applicable                   |
Chemical stability              | Stable under recommended storage conditions. |
Possibility of Hazardous Reactions | None under normal processing. |
Hazardous polymerization        | No information available.        |
Conditions to avoid             | Extremes of temperature and direct sunlight. |
Incompatible materials          | Strong oxidizing agents.         |

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure
Inhalation  
No data available.

Eye contact  
No data available.

Skin Contact  
No data available.

Ingestion  
No data available.

Information on toxicological effects
Symptoms  
No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure
Chronic Toxicity  
Avoid repeated exposure.

Numerical measures of toxicity - Product Information
Unknown acute toxicity  
No information available
The following values are calculated based on chapter 3.1 of the GHS document
ATEmix (oral)  
560 mg/kg
ATEmix (dermal)  
271 mg/kg

12. ECOLOGICAL INFORMATION

Ecotoxicity  
May cause long lasting harmful effects to aquatic life

100% of the mixture consists of components(s) of unknown hazards to the aquatic environment.

Persistence and degradability  
No information available.

Bioaccumulation  
No information available.

Mobility  
No information available.

13. DISPOSAL CONSIDERATIONS

Disposal of wastes  
Disposal should be in accordance with applicable regional, national and local laws and regulations.
Contaminated packaging  
Do not reuse container.
Other Information  
Waste codes should be assigned by the user based on the application for which the product was used.

14. TRANSPORT INFORMATION

DOT  
Not regulated
IMDG  
Not regulated
IATA  
Not regulated

15. REGULATORY INFORMATION

International Inventories
All of the components in the product are on the following Inventory lists
Europe (EINECS/ELINCS/NLP) Australia (AICS)
Chemical Name | TSCA | DSL | NDSL | EINECS | ELINCS | ENCS | IECSC | KECL | PICCS | AICS
--- | --- | --- | --- | --- | --- | --- | --- | --- | --- | ---
Diltiazem hydrochloride | - | - | - | X | - | - | - | - | - | X

**X - Listed**

**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

**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**

- Acute health hazard: Yes  
- Chronic Health Hazard: Yes  
- Fire hazard: No  
- Sudden release of pressure hazard: No  
- Reactive hazard: No

**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).

**US State Regulations**

**California Proposition 65**
This product contains the following Proposition 65 chemicals.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>California Proposition 65</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diltiazem hydrochloride - 33286-22-5</td>
<td>Developmental</td>
</tr>
</tbody>
</table>

**U.S. State Right-to-Know Regulations**
This product does not contain any substances regulated by state right-to-know regulations

**16. OTHER INFORMATION**

Revision note: No information available

**Disclaimer**
The information provided in this Material 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.

**End of Safety Data Sheet**