SAFETY DATA SHEET
Santa Cruz Biotechnology, Inc.
Revision date 16-Nov-2015
Version 1.1

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name
Bendamustine Hydrochloride

Product Code
SC-207320

Recommended use
For research use only. Not intended for diagnostic or therapeutic use.

Company
Santa Cruz Biotechnology, Inc.
10410 Finnell Street
Dallas, TX 75220
831.457.3800
800.457.3801
scbt@scbt.com

2. HAZARDS IDENTIFICATION

Signal word
ATTENTION

Emergency Overview
Contains a known or suspected mutagen
Contains a known or suspected carcinogen
Contains a known or suspected reproductive toxin
Irritating to respiratory system
May cause skin irritation and/or dermatitis
Severe eye irritation
Vapors may be irritating to eyes, nose, throat, and lungs
Product dust may be irritating to eyes, skin and respiratory system

OSHA Regulatory Status
This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Potential health effects
Eyes
Avoid contact with eyes. Risk of serious damage to eyes.

Skin
Irritating to skin. May cause inflammation. Avoid contact with skin.

Inhalation
Irritating to respiratory system. May cause irritation of respiratory tract.

Ingestion
Ingestion may cause irritation to mucous membranes.

Chronic Toxicity
Prolonged or repeated exposure increases the risk. Possible risk of irreversible effects. Avoid repeated exposure.

Hazards not otherwise classified (HNOC)
Hazards not otherwise classified (HNOC) Not applicable

Environmental Hazard
See Section 12: ECOLOGICAL INFORMATION.

<table>
<thead>
<tr>
<th>NFPA</th>
<th>Flammability</th>
<th>Physical and chemical properties</th>
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<tr>
<td>Health hazards</td>
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<td>-</td>
</tr>
<tr>
<td>Flammability</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>Stability</td>
<td>0</td>
<td>-</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>HMIS</th>
<th>Health hazards</th>
<th>Flammability</th>
<th>Physical hazards</th>
<th>Personal protection</th>
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<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>-</td>
</tr>
</tbody>
</table>

Page 1 / 6
### 3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Product Name</th>
<th>Bendamustine Hydrochloride</th>
</tr>
</thead>
<tbody>
<tr>
<td>Molecular Weight</td>
<td>394.72</td>
</tr>
<tr>
<td>Formula</td>
<td>C_{16}H_{21}Cl_{2}N_{3}O_{2} HCl</td>
</tr>
</tbody>
</table>

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

**Note to physicians**
Treat symptomatically.

**Self-protection of the first aider**
Use personal protective equipment as required. Avoid contact with skin, eyes or clothing. Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

### 5. FIRE-FIGHTING MEASURES

**Suitable Extinguishing Media**
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Specific hazards arising from the chemical**
Thermal decomposition can lead to release of toxic/corrosive gases and vapors.

**Flash point °C**
307.7

**Hazardous combustion products**

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

**Protective equipment and precautions for firefighters**
Wear self-contained breathing apparatus and protective suit. Wear self contained breathing apparatus for fire fighting if necessary.

### 6. ACCIDENTAL RELEASE MEASURES
7. HANDLING AND STORAGE

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. Thermal decomposition can lead to release of toxic/corrosive gases and vapors.

Storage Conditions
Keep container tightly closed in a dry and well-ventilated place. Keep out of the reach of children. Keep containers tightly closed in a cool, well-ventilated place. Keep in properly labeled containers.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure controls
Engineering Controls
- Showers
- Eyewash stations
- Ventilation systems

Personal protective equipment (PPE)
Eye/face protection
- Tight sealing safety goggles. Face protection shield.
Skin and Body Protection
- Gloves made of plastic or rubber. Suitable protective clothing. Suitable protective clothing.
- Apron.
Respiratory protection
- Ensure adequate ventilation, especially in confined areas.
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>
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<tr>
<td>Appearance</td>
<td>crystalline</td>
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<tr>
<td>Odor</td>
<td>No information available</td>
</tr>
<tr>
<td>pH</td>
<td>No information available</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>149 °C</td>
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<tr>
<td>Boiling point</td>
<td>585.2 °C</td>
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<tr>
<td>Flash point</td>
<td>307.7 °C</td>
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<tr>
<td>Density</td>
<td>No information available</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No information available</td>
</tr>
</tbody>
</table>
10. STABILITY AND REACTIVITY

Reactivity
Stability
Incompatible materials
Conditions to avoid
Hazardous Decomposition Products
Hazardous polymerization
Not applicable
Stable under recommended storage conditions.
Incompatible with oxidizing agents.
Heat, flames and sparks. Extremes of temperature and direct sunlight.
Hazardous polymerization does not occur

11. TOXICOLOGICAL INFORMATION

Acute toxicity
Product Information
Product does not present an acute toxicity hazard based on known or supplied information.

Chronic Toxicity
Chronic Toxicity
Prolonged or repeated exposure increases the risk. Possible risk of irreversible effects.
Avoid repeated exposure.

Target Organ Effects
None known.

12. ECOLOGICAL INFORMATION

Ecotoxicity
Ecotoxicity
Persistence and degradability
Bioaccumulation
The environmental impact of this product has not been fully investigated.
No information available.
No information available.

13. DISPOSAL CONSIDERATIONS

Disposal considerations
Contaminated packaging
Disposal should be in accordance with applicable regional, national and local laws and regulations.
Do not reuse container.

14. TRANSPORT INFORMATION

DOT
UN/ID no
UN2811
Hazard Class 6.1
Packing Group III
Proper shipping name Toxic solids, organic, n.o.s.
Description UN2811, Toxic solids, organic, n.o.s. (Bendamustine Hydrochloride), 6.1, III
Emergency Response Guide Number 154

IATA
UN/ID no UN2811
Hazard Class 6.1
Packing Group III
Proper shipping name Toxic solid, organic, n.o.s.
Description UN2811, Toxic solid, organic, n.o.s. (Bendamustine Hydrochloride), 6.1, III
Special Provisions A3, A5

IMDG
UN/ID no UN2811
Hazard Class 6.1
Packing Group III
Proper shipping name Toxic solid, organic, n.o.s.
Description UN2811, Toxic solid, organic, n.o.s. (Bendamustine Hydrochloride), 6.1, III
EmS-No F-A, S-A

15. REGULATORY INFORMATION

International Inventories
All of the components in the product are on the following Inventory lists No information available

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 does not contain any Proposition 65 chemicals.
U.S. State Right-to-Know Regulations
This product does not contain any substances regulated by state right-to-know regulations

Mexico Regulatory Information

Canada Regulatory Information
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR

WHMIS Hazard Class Non-controlled

16. OTHER INFORMATION

Revision date 16-Nov-2015
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