Material Safety Data Sheet

Brucine sulfate

sc-293963

Hazard Alert Code Key:  
- **EXTREME**
- **HIGH**
- **MODERATE**
- **LOW**

Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME**  
Brucine sulfate

**STATEMENT OF HAZARDOUS NATURE**  

**NFPA**

**SUPPLIER**  
Santa Cruz Biotechnology, Inc.  
2145 Delaware Avenue  
Santa Cruz, California 95060  
800.457.3801 or 831.457.3800

**EMERGENCY**  
ChemWatch  
Within the US & Canada: 877–715–9305  
Outside the US & Canada: +800 2436 2255 (1–800-CHEMCALL) or call +613 9573 3112

**SYNONYMS**  
C46H52N4O8•H2SO4, (C23-H26-N2-O4)2.H2SO4, "brucine sulphate", "brucine sulfate hydrate [CAS RN: 652154-10-4]", "strychnidin-10-one, 2, 3-dimethoxy-, sulphate (2:1)", "strychnidin-10-one, 2, 3-dimethoxy-, sulfate (2:1)", "2, 3-dimethoxyztrychndin-10-one sulphate", "2, 3-dimethoxyztrychndin-10-one sulfate"

Section 2 - HAZARDS IDENTIFICATION

**CHEMWATCH HAZARD RATINGS**

<table>
<thead>
<tr>
<th></th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammability</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Toxicity</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Body Contact</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Reactivity</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Chronic</td>
<td>0</td>
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</tbody>
</table>

**CANADIAN WHMIS SYMBOLS**
EMERGENCY OVERVIEW
RISK
Toxic in contact with skin.
Very toxic by inhalation and if swallowed.
Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

POTENTIAL HEALTH EFFECTS
ACUTE HEALTH EFFECTS

SWALLOWED
- Severely toxic effects may result from the accidental ingestion of the material; animal experiments indicate that ingestion of less than 5 gram may be fatal or may produce serious damage to the health of the individual.
- The toxicity of strychnine is due to its strong excitatory effect on the central nervous system.
Initially there may be tremors, stiffness and twitching of the face and legs; this progresses to apprehension, fear, nausea and a feeling of identity loss.

EYE
- Although the material is not thought to be an irritant, direct contact with the eye may cause transient discomfort characterized by tearing or conjunctival redness (as with windburn).
- Slight abrasive damage may also result.

SKIN
- Skin contact with the material may produce toxic effects; systemic effects may result following absorption.
- The material is not thought to be a skin irritant (as classified using animal models).
- Abrasive damage however, may result from prolonged exposures.
- Open cuts, abraded or irritated skin should not be exposed to this material.
- Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects.
- Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.

INHALED
- Inhalation of dusts, generated by the material, during the course of normal handling, may produce severely toxic effects; these may be fatal.
- The material is not thought to produce respiratory irritation (as classified using animal models).
- Nevertheless inhalation of dusts, or fume, especially for prolonged periods, may produce respiratory discomfort and occasionally, distress.
- Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled.

CHRONIC HEALTH EFFECTS
- Long-term exposure to the product is not thought to produce chronic effects adverse to the health (as classified using animal models); nevertheless exposure by all routes should be minimized as a matter of course.
- Long term exposure to high dust concentrations may cause changes in lung function i.e. pneumoconiosis; caused by particles less than 0.5 micron penetrating and remaining in the lung.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>NAME</th>
<th>CAS RN</th>
<th>%</th>
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</thead>
<tbody>
<tr>
<td>brucine sulfate (as heptahydrate)</td>
<td>4845-99-2</td>
<td>100</td>
</tr>
</tbody>
</table>

Section 4 - FIRST AID MEASURES

SWALLOWED
- Give a slurry of activated charcoal in water to drink. NEVER GIVE AN UNCONSCIOUS PATIENT WATER TO DRINK. · At least 3 tablespoons in a glass of water should be given.

EYE
- If this product comes in contact with the eyes: · Immediately hold eyelids apart and flush the eye continuously with running water. · Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.

SKIN
- If skin or hair contact occurs: · Quickly but gently, wipe material off skin with a dry, clean cloth. · Immediately remove all contaminated clothing, including footwear.

INHALED
- If fumes or combustion products are inhaled remove from contaminated area. · Lay patient down. Keep warm and rested.
NOTES TO PHYSICIAN

■ The main object of strychnine therapy is to control or prevent convulsions and asphyxia; immediate treatment involves the intravenous administration of diazepam (10 mg - less for children), repeated as required. Muscle relaxants (e.g.

### Section 5 - FIRE FIGHTING MEASURES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vapour Pressure (mmHg)</td>
<td>Negligible</td>
</tr>
<tr>
<td>Upper Explosive Limit (%)</td>
<td>Not available</td>
</tr>
<tr>
<td>Specific Gravity (water=1)</td>
<td>Not available</td>
</tr>
<tr>
<td>Lower Explosive Limit (%)</td>
<td>Not available</td>
</tr>
</tbody>
</table>

**EXTINGUISHING MEDIA**

- Foam.
- Dry chemical powder.

**FIRE FIGHTING**

- Alert Emergency Responders and tell them location and nature of hazard.
- Wear full body protective clothing with breathing apparatus.

When any large container (including road and rail tankers) is involved in a fire, consider evacuation by 800 metres in all directions.

**GENERAL FIRE HAZARDS/HAZARDOUS COMBUSTIBLE PRODUCTS**

- Combustible solid which burns but propagates flame with difficulty.
- Avoid generating dust, particularly clouds of dust in a confined or unventilated space as dusts may form an explosive mixture with air, and any source of ignition, i.e. flame or spark, will cause fire or explosion. Dust clouds generated by the fine grinding of the solid are a particular hazard; accumulations of fine dust may burn rapidly and fiercely if ignited.

Combustion products include: carbon monoxide (CO), carbon dioxide (CO2), nitrogen oxides (NOx), sulfur oxides (SOx), other pyrolysis products typical of burning organic material.

May emit poisonous fumes.

**FIRE INCOMPATIBILITY**

■ Avoid contamination with oxidizing agents i.e. nitrates, oxidizing acids, chlorine bleaches, pool chlorine etc. as ignition may result.

**PERSONAL PROTECTION**

Glasses: Chemical goggles.
Gloves: Respirator: Particulate

### Section 6 - ACCIDENTAL RELEASE MEASURES

**MINOR SPILLS**

- Clean up waste regularly and abnormal spills immediately.
- Avoid breathing dust and contact with skin and eyes.
- Wear protective clothing, gloves, safety glasses and dust respirator.
- Use dry clean up procedures and avoid generating dust.
- Vacuum up or sweep up. NOTE: Vacuum cleaner must be fitted with an exhaust micro filter (HEPA type) (consider explosion-proof machines designed to be grounded during storage and use).
- Dampen with water to prevent dusting before sweeping.
- Place in suitable containers for disposal.

**MAJOR SPILLS**

- Clear area of personnel and move upwind.
- Alert Emergency Responders and tell them location and nature of hazard.

### Section 7 - HANDLING AND STORAGE

**PROCEDURE FOR HANDLING**

- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of exposure occurs.

Empty containers may contain residual dust which has the potential to accumulate following settling. Such dusts may explode in the presence of an appropriate ignition source.

- Do NOT cut, drill, grind or weld such containers.
- In addition ensure such activity is not performed near full, partially empty or empty containers without appropriate workplace safety authorisation or permit.

**RECOMMENDED STORAGE METHODS**

■ Glass container.
- Lined metal can, Lined metal pail/drum
- Plastic pail.
- For low viscosity materials
- Drums and jerricans must be of the non-removable head type.
Where a can is to be used as an inner package, the can must have a screwed enclosure. All inner and sole packagings for substances that have been assigned to Packaging Groups I or II on the basis of inhalation toxicity criteria, must be hermetically sealed.

**STORAGE REQUIREMENTS**
- Store in original containers.
- Keep containers securely sealed.

**Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION**

**EXPOSURE CONTROLS**
The following materials had no OELs on our records

**PERSONAL PROTECTION**

**RESPIRATOR**
Particulate
Consult your EHS staff for recommendations

**EYE**
- Safety glasses with side shields
- Chemical goggles.

**HANDS/FEET**
- Wear chemical protective gloves, eg. PVC.

Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include: such as:
- frequency and duration of contact,
- chemical resistance of glove material,
- glove thickness and
dexterity

Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739).
- When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374) is recommended.
- When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374) is recommended.
- Contaminated gloves should be replaced.
Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.

**OTHER**
- Overalls.
- Eyewash unit.

**ENGINEERING CONTROLS**
- Local exhaust ventilation is required where solids are handled as powders or crystals; even when particulates are relatively large, a certain proportion will be powdered by mutual friction.
- Exhaust ventilation should be designed to prevent accumulation and recirculation of particulates in the workplace.

**Section 9 - PHYSICAL AND CHEMICAL PROPERTIES**

**PHYSICAL PROPERTIES**
Solid.
Does not mix with water.

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
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<tbody>
<tr>
<td>State</td>
<td>Divided solid</td>
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<tr>
<td>Molecular Weight</td>
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<td>Melting Range (°F)</td>
<td>356 (decomposes)</td>
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<td>Boiling Range (°F)</td>
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<tr>
<td>Solubility in water (g/L)</td>
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<td>pH (1% solution)</td>
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<tr>
<td>Decomposition Temp (°F)</td>
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<tr>
<td>pH (as supplied)</td>
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<tr>
<td>Vapour Pressure (mmHG)</td>
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<td>Upper Explosive Limit (%)</td>
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</table>
### Section 10 - CHEMICAL STABILITY

**CONDITIONS CONTRIBUTING TO INSTABILITY**
- Presence of incompatible materials.
- Product is considered stable.

**STORAGE INCOMPATIBILITY**
- Avoid storage with reducing agents.

For incompatible materials - refer to Section 7 - Handling and Storage.

### Section 11 - TOXICOLOGICAL INFORMATION

**brucine sulfate**

**TOXICITY AND IRRITATION**

**BRUCINE SULFATE:**
- No significant acute toxicological data identified in literature search.

### Section 12 - ECOLOGICAL INFORMATION

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

This material and its container must be disposed of as hazardous waste.

### Section 13 - DISPOSAL CONSIDERATIONS

**Disposal Instructions**

All waste must be handled in accordance with local, state and federal regulations.
- Puncture containers to prevent re-use and bury at an authorized landfill.

Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.

A Hierarchy of Controls seems to be common - the user should investigate:

- Reduction
- Reuse
- Recycling
- Disposal (if all else fails)

This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate.

DO NOT allow wash water from cleaning equipment to enter drains. Collect all wash water for treatment before disposal.
- Recycle wherever possible.
- Consult manufacturer for recycling options or consult Waste Management Authority for disposal if no suitable treatment or disposal facility can be identified.

### Section 14 - TRANSPORTATION INFORMATION

**DOT:**

- Symbols: G Hazard class or Division: 6.1
- Identification Numbers: UN2811 PG: I
- Label Codes: 6.1 Special provisions: IB7, T6, TP33
- Packaging: Exceptions: None
- Packaging: Non-bulk: 211
- Passenger aircraft/rail: Quantity Limitations: Cargo 50 kg
- Vessel stowage: Location: B aircraft only:

**Air Transport IATA:**

- ICAO/IATA Class: 6.1
- Hazardous materials descriptions and proper shipping names:
  - Toxic solids, organic, n.o.s.
UN/ID Number: 2811 Packing Group: I
Special provisions: A3
Cargo Only
Packing Instructions: 50 kg Maximum Qty/Pack: 5 kg
Passenger and Cargo Passenger and Cargo
Packing Instructions: 607 Maximum Qty/Pack: 606
Passenger and Cargo Limited Quantity Passenger and Cargo Limited Quantity
Packing Instructions: Forbidden Maximum Qty/Pack: Forbidden
Shipping Name: TOXIC SOLID, ORGANIC, N.O.S. *(CONTAINS BRUCINE SULFATE)

Maritime Transport IMDG:
IMDG Class: 6.1 IMDG Subrisk: None
UN Number: 2811 Packing Group: I
EMS Number: F-A , S-A Special provisions: 274
Limited Quantities: 0
Shipping Name: TOXIC SOLID, ORGANIC, N.O.S.

Section 15 - REGULATORY INFORMATION
brucine sulfate (CAS: 4845-99-2,5787-00-8,38741-38-7,652154-10-4) is found on the following regulatory lists;
"Canada Domestic Substances List (DSL)","Canada Toxicological Index Service - Workplace Hazardous Materials Information System - WHMIS (English)","International Fragrance Association (IFRA) Survey: Transparency List","US Toxic Substances Control Act (TSCA) - Inventory"

Section 16 - OTHER INFORMATION
Ingredients with multiple CAS Nos
Ingredient Name CAS brucine sulfate 4845-99-2, 5787-00-8, 38741-38-7, 652154-10-4

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Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references. A list of reference resources used to assist the committee may be found at:
www.chemwatch.net/references.

The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

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