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

Product identifier
Product Name: Theobromine
Product Code: SC-203296

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

Details of the supplier of the safety data sheet
Santa Cruz Biotechnology, Inc.
10410 Finnell Street
Dallas, TX 75220
831.457.3800
800.457.3801
scbt@scbt.com

2. HAZARDS IDENTIFICATION

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

Classification
Acute toxicity - Oral: Category 3

Label elements
Signal word: Danger
Hazard statements: Toxic if swallowed
Symbols/Pictograms

Precautionary Statements - Prevention
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/physician
Rinse mouth

Precautionary Statements - Storage
Store locked up

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

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

Other Information

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

HMIS
Health hazards: 1
Flammability: 0
Physical hazards: 0
Personal protection: -
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>Theobromine</td>
<td>83-67-0</td>
<td>&gt;98</td>
<td>= 1265 mg/kg (Rat)</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

First Aid Measures

General advice
If symptoms persist, call a physician. Do not breathe dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing.

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. If symptoms persist, call a physician.

Skin Contact
Consult a physician if necessary. 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. Immediate medical attention is not required.

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

Ingestion
Rinse mouth. Drink plenty of water. If symptoms persist, call a physician. Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Call a physician.

Self-protection of the first aider
Use personal protective equipment as required.

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
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.

Hazardous combustion products
Carbon oxides. Nitrogen oxides (NOx).

Explosion data

Sensitivity to Mechanical Impact
No information available.

Sensitivity to Static Discharge
No information available.

Protective equipment and precautions for firefighters
6. ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment and emergency procedures**

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

**Environmental precautions**
Prevent entry into waterways, sewers, basements or confined areas. Do not flush into surface water or sanitary sewer system. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. See Section 12 for additional Ecological Information.

**Methods and material for containment and cleaning up**
Prevent further leakage or spillage if safe to do so.
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**
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.

**Conditions for safe storage, including any incompatibilities**
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. Store at room temperature.

**Incompatible materials**
None known based on information supplied.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Control parameters**
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**
Shower
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.

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Physical State</th>
<th>Solid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>powder</td>
</tr>
<tr>
<td>Odor</td>
<td>Odorless</td>
</tr>
</tbody>
</table>

**Property**

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH</td>
<td>No information available</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>357 °C</td>
</tr>
<tr>
<td>Boiling point</td>
<td>483.47 °C</td>
</tr>
<tr>
<td>Flash point</td>
<td>No information available</td>
</tr>
<tr>
<td>Density</td>
<td>1.50 g/cm³</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>-0.78</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

<table>
<thead>
<tr>
<th>Reactivity</th>
<th>Not applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical stability</td>
<td>Stable under recommended storage conditions.</td>
</tr>
<tr>
<td>Possibility of Hazardous Reactions</td>
<td>None under normal processing.</td>
</tr>
<tr>
<td>Hazardous polymerization</td>
<td>No information available</td>
</tr>
<tr>
<td>Conditions to avoid</td>
<td>Extremes of temperature and direct sunlight.</td>
</tr>
<tr>
<td>Incompatible materials</td>
<td>Strong oxidizing agents.</td>
</tr>
<tr>
<td>Hazardous Decomposition Products</td>
<td>Carbon oxides. Nitrogen oxides (NOx).</td>
</tr>
</tbody>
</table>

11. TOXICOLOGICAL INFORMATION

**Information on likely routes of exposure**

<table>
<thead>
<tr>
<th>Route</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inhalation</td>
<td>No data available.</td>
</tr>
<tr>
<td>Eye contact</td>
<td>No data available.</td>
</tr>
<tr>
<td>Skin Contact</td>
<td>No data available.</td>
</tr>
<tr>
<td>Ingestion</td>
<td>No data available.</td>
</tr>
</tbody>
</table>

**Information on toxicological effects**

<table>
<thead>
<tr>
<th>Route</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptoms</td>
<td>No information available.</td>
</tr>
</tbody>
</table>
Delayed and immediate effects as well as chronic effects from short and long-term exposure

**Chronic Toxicity**
Avoid repeated exposure.

**Carcinogenicity**
The table below indicates whether each agency has listed any ingredient as a carcinogen.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH</th>
<th>IARC</th>
<th>NTP</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theobromine</td>
<td>-</td>
<td>Group 3</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>83-67-0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*IARC (International Agency for Research on Cancer)* Not classifiable as a human carcinogen

**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) 100 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
TSCA (United States): Canada (DSL/NDSL) Europe (EINECS/ELINCS/NLP) Australia (AICS) China (IECSC) ENCS (Japan):
Philippines (PICCS)

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>TSCA</th>
<th>DSL</th>
<th>NDSL</th>
<th>EINECS</th>
<th>ELINCS</th>
<th>ENCS</th>
<th>IECSC</th>
<th>KECL</th>
<th>PICCS</th>
<th>AICS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theobromine</td>
<td>X</td>
<td>-</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>
**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>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute health hazard</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chronic Health Hazard</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Fire hazard</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sudden release of pressure hazard</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Reactive hazard</td>
<td></td>
<td></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).

**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.

**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