1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: N-Nitrosodiethylamine
Product Code: SC-257861
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

Emergency telephone number
Chemtrec
1.800.424.9300 (Within USA)
+1.703.527.3887 (Outside USA)

2. HAZARDS IDENTIFICATION

Emergency Overview: The product contains no substances which at their given concentration, are considered to be hazardous to health

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

Potential health effects: Inhalation
Skin Contact
Eye contact
Eyes: May cause irritation.
Skin: May be harmful in contact with skin.
Inhalation: May be harmful if inhaled.
Ingestion: May be harmful if swallowed.
Chronic Toxicity: No known effect.

Hazards not otherwise classified (HNOC): Not applicable

Environmental Hazard: See Section 12: ECOLOGICAL INFORMATION.

NFPA
- Health hazards: 2
- Flammability: 2
- Stability: 0
- Physical and chemical properties: -

HMIS
- Health hazards: 2
- Flammability: 2
- Physical hazards: 0
- Personal protection: -
3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Product Name</th>
<th>N-Nitrosodiethylamine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Molecular Weight</td>
<td>102.14</td>
</tr>
<tr>
<td>Formula</td>
<td>C₄H₁₀N₂O</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

General advice Consult a physician if necessary. Remove to fresh air.
Eye contact Wash with plenty of water.
Skin Contact Wash off immediately with soap and plenty of water.
Inhalation Remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration.
Ingestion Never give anything by mouth to an unconscious person. Clean mouth with water.
Note to physicians Treat symptomatically.
Self-protection of the first aider Avoid contact with skin, eyes or clothing.

5. FIRE-FIGHTING MEASURES

**Suitable Extinguishing Media**
Dry chemical, CO₂, water spray or alcohol-resistant foam.

**Specific hazards arising from the chemical**
- Flammable properties: Not determined.
- Flash point °C: 59.0

**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**
Ensure adequate ventilation, especially in confined areas.

**Environmental precautions**
See Section 12 for additional Ecological Information.

**Methods for containment**
Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up**
Pick up and transfer to properly labeled containers.

7. HANDLING AND STORAGE

**Advice on safe handling**
Possibly Carcinogenic.

**Storage Conditions**
Keep containers tightly closed in a dry, cool and well-ventilated place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION
Exposure controls
Engineering Controls
- Showers
- Eyewash stations
- Ventilation systems

Personal protective equipment (PPE)
Eye/face protection
- Wear safety glasses with side shields (or goggles).

Skin and Body Protection
- Wear protective gloves and protective clothing.

Respiratory protection
- Ensure adequate ventilation, especially in confined areas.

General Hygiene Considerations
- Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical State</td>
<td>liquid</td>
</tr>
<tr>
<td>Appearance</td>
<td>No information available</td>
</tr>
<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>No information available</td>
</tr>
<tr>
<td>Boiling point</td>
<td>177 °C</td>
</tr>
<tr>
<td>Flash point</td>
<td>59.0 °C</td>
</tr>
<tr>
<td>Density</td>
<td>0.95 g/mL</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>1</td>
</tr>
<tr>
<td>Specific gravity</td>
<td>0.95</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>0.48</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

Stability
- Stable under recommended storage conditions.

Incompatible materials
- Incompatible with oxidizing agents.

Conditions to avoid
- Heat, flames and sparks. Extremes of temperature and direct sunlight.

Hazardous Decomposition Products
- Carbon oxides. Nitrogen oxides (NOx).

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

Target Organ Effects
- None known.
12. ECOLOGICAL INFORMATION

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

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>RCRA</th>
<th>RCRA - Basis for Listing</th>
<th>RCRA - D Series Wastes</th>
<th>RCRA - U Series Wastes</th>
</tr>
</thead>
<tbody>
<tr>
<td>N-Nitrosodiethylamine - 55-18-5</td>
<td>U174</td>
<td>Included in waste stream: F039</td>
<td></td>
<td>U174</td>
</tr>
</tbody>
</table>

14. TRANSPORT INFORMATION

DOT
UN/ID no: UN2810
Hazard Class: 6.1
Packing Group: III
Proper shipping name: TOXIC LIQUIDS, ORGANIC, N.O.S.
Description: UN2810, TOXIC LIQUIDS, ORGANIC, N.O.S., 6.1, III
Reportable Quantity (RQ): (N-Nitrosodiethylamine: RQ (kg)= 0.454)
Emergency Response Guide Number: 153

IATA
UN/ID no: UN2810
Hazard Class: 6.1
Packing Group: III
Proper shipping name: Toxic liquid, organic, n.o.s.
Description: UN2810, Toxic liquid, organic, n.o.s., 6.1, III
ERG Code: 6L
Special Provisions: A3, A4, A137

IMDG
UN/ID no: UN2810
Hazard Class: 6.1
Packing Group: III
Proper shipping name: TOXIC LIQUID, ORGANIC, N.O.S.
Description: UN2810, TOXIC LIQUID, ORGANIC, N.O.S., 6.1, III, (59°C C.C.)
EmS-No: F-A, S-A

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)
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 No
Chronic Health Hazard No
Fire hazard Yes
Sudden release of pressure hazard No
Reactive hazard No

CWA (Clean Water Act)
This product contains the following substances which are regulated 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>N-Nitrosodiethylamine - 55-18-5</td>
<td>Carcinogen</td>
</tr>
</tbody>
</table>

U.S. State Right-to-Know Regulations

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>New Jersey</th>
<th>Massachusetts</th>
<th>Pennsylvania</th>
</tr>
</thead>
<tbody>
<tr>
<td>N-Nitrosodiethylamine 55-18-5</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

Mexico Regulatory Information

Mexico - Grade Moderate risk, Grade 2

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 B3 - Combustible liquid
D2A - Very toxic materials

16. OTHER INFORMATION
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