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

Product identifier
Product Name 2-Ethylhexanoic acid
Product Code SC-238035

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 4
Acute toxicity - Dermal Category 4
Reproductive toxicity Category 2

Label elements
Signal word Warning
Hazard statements Harmful if swallowed
Harmful in contact with skin
Suspected of damaging fertility or the unborn child

Precautionary Statements - Prevention
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required
Wash face, hands and any exposed skin thoroughly after handling

Precautionary Statements - Response
IF exposed or concerned: Get medical advice/attention
IF ON SKIN: Wash with plenty of soap and water
Call a POISON CENTER or doctor/physician if you feel unwell
Wash contaminated clothing before reuse
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
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)

Not applicable

Other Information

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

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>2-Ethylhexanoic acid</td>
<td>149-57-5</td>
<td>&gt;98</td>
<td>= 1600 mg/kg (Rat)</td>
<td>= 1140 mg/kg (Rabbit)</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.

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.

Ingestion
Rinse mouth. Drink plenty of water. If symptoms persist, call a physician. Do NOT induce vomiting.

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
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.
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
Ensure adequate ventilation, especially in confined areas.
Environmental precautions
Environmental precautions
Prevent entry into waterways, sewers, basements or confined areas. 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.
Methods for cleaning up
Cover liquid spill with sand, earth or other non-combustible absorbent material. Cover powder spill with plastic sheet or tarp to minimize spreading. Pick up and transfer to properly labeled containers.

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.
Conditions for safe storage, including any incompatibilities
Storage Conditions
Keep container tightly closed in a dry and well-ventilated place. Keep out of the reach of children. Store at room temperature.
Incompatible materials
None known based on information supplied.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters
Exposure Guidelines

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>NIOSH IDLH</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Ethylhexanoic acid 149-57-5</td>
<td>TWA: 5 mg/m³ inhalable fraction and vapor</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

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.
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
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>-59 °C</td>
</tr>
<tr>
<td>Boiling point</td>
<td>228 °C</td>
</tr>
<tr>
<td>Flash point</td>
<td>114 °C CC (closed cup)</td>
</tr>
<tr>
<td>Density</td>
<td>0.903 g/mL</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No information available</td>
</tr>
<tr>
<td>Upper flammability limits</td>
<td>6.7%</td>
</tr>
<tr>
<td>Lower flammability limit</td>
<td>0.9%</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>10 mmHg</td>
</tr>
<tr>
<td>Vapor density</td>
<td>4.98</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>2.7</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.

Hazardous Decomposition Products
Carbon oxides.

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

No information available.

**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) | 1600 mg/kg |
| ATEmix (dermal) | 1140 mg/kg |

**12. ECOLOGICAL INFORMATION**

Ecotoxicity
May cause long lasting harmful effects to aquatic life

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Algae/aquatic plants</th>
<th>Fish</th>
<th>Toxicity to Microorganisms</th>
<th>Crustacea</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Ethylhexanoic acid 149-57-5</td>
<td>41: 96 h Desmodesmus subspicatus mg/L EC50 61: 72 h Desmodesmus subspicatus mg/L EC50</td>
<td>70: 96 h Pimephales promelas mg/L LC50</td>
<td>-</td>
<td>85.4: 48 h Daphnia magna mg/L EC50</td>
</tr>
</tbody>
</table>

0% of the mixture consists of component(s) of unknown hazards to the aquatic environment.

Persistence and degradability
No information available.

Bioaccumulation
No information available.

Mobility
No information available.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Partition coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Ethylhexanoic acid 149-57-5</td>
<td>2.7</td>
</tr>
</tbody>
</table>

**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**

<table>
<thead>
<tr>
<th>DOT</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not regulated</td>
<td>Not regulated</td>
<td>Not regulated</td>
</tr>
</tbody>
</table>

**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) South Korea (KECL): 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>2-Ethylhexanoic acid</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>X</td>
<td>-</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

**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: 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**

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>New Jersey</th>
<th>Massachusetts</th>
<th>Pennsylvania</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Ethylhexanoic acid 149-57-5</td>
<td>X</td>
<td>Not Listed</td>
<td>Not Listed</td>
</tr>
</tbody>
</table>

**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*