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

Product identifier
Product Name: Alizarin
Product Code: SC-214519

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
Serious eye damage/eye irritation: Category 2A

Label elements
Signal word: Warning
Hazard statements: Harmful if swallowed
Causes serious eye irritation

Precautionary Statements - Prevention
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Wear protective gloves/protective clothing/eye protection/face protection

Precautionary Statements - Response
IF exposed or concerned: Get medical advice/attention
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
If eye irritation persists: Get medical advice/attention
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth

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

Santa Cruz Biotechnology, Inc.  www.scbt.com
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>Alizarin</td>
<td>72-48-0</td>
<td>&gt;98</td>
<td>= 1000 mg/kg (Rat)</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

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.
- **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.

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
Hazardous combustion products
No information available.
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
  Wear self-contained breathing apparatus and protective suit. Wear self contained breathing apparatus for fire fighting if necessary.

6. ACCIDENTAL RELEASE MEASURES

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

**Environmental precautions**
- Environmental precautions
  Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. 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. Cover powder spill with plastic sheet or tarp to minimize spreading. Dike far ahead of liquid spill for later disposal.
- Methods for cleaning up
  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**
- 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.

**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. 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**
- Exposure Guidelines
  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
- Showers
- 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. 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>
</tr>
<tr>
<td>Appearance</td>
<td>crystalline or powder</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>279 °C</td>
</tr>
<tr>
<td>Boiling point</td>
<td>430 °C</td>
</tr>
<tr>
<td>Flash point</td>
<td>228.0 °C</td>
</tr>
<tr>
<td>Density</td>
<td>1.5 g/cm³</td>
</tr>
<tr>
<td>Evaporation rate</td>
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</tr>
<tr>
<td>Upper flammability limits</td>
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</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>
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</tr>
<tr>
<td>Partition coefficient</td>
<td>2.45</td>
</tr>
<tr>
<td>Autoignition temperature</td>
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</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. Strong oxidizing agents.
- Incompatible materials: Carbon oxides.
- Hazardous Decomposition Products: No information available.

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

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)  
1000 mg/kg

12. ECOLOGICAL INFORMATION
Ecotoxicity  
May cause long lasting harmful effects to aquatic life

0% 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) 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>
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</thead>
<tbody>
<tr>
<td>Alizarin</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>X</td>
<td>-</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></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: 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

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