1. IDENTIFICATION

Product Identifier: Alizarin
Product Number: A094
Distributor Name: TOKU-E Company
Distributor Address: 715 W Orchard Dr. Suite 3
Bellingham, WA 98225
Phone Number: (360)734-1789
Emergency Phone Number (International): +1 (352) 353-3500
Emergency Phone Number (US Only): 1 (800) 535-5053
Safety Data Sheet Issued by: TOKU-E USA
CAS-Number: [72-48-0]
EC/REACH Number: [200-782-5]
Recommended Use: Alizarin has moderate antibacterial activity against Staphylococcus epidermidis and Salmonella enterica.
Restrictions of USE: Not for human or animal use

2. HAZARD(S) IDENTIFICATION

GHS Classification:
- Acute toxicity Oral (Category 4)
- Acute aquatic toxicity (Category 2)

GHS Label Elements, Including:
- Signal Word: Warning
- H302 Harmful if Swallowed
- H401 Toxic to aquatic life
- P264 Wash hands/skin thoroughly after handling.
- P270 Do not eat, drink, or smoke when using this product.
- P301+P312 IF SWALLOWED: call a POISON CENTER or doctor/physician IF you feel unwell
- P330 Rinse mouth
- P501 Dispose of contents/container to proper waste container
- P312 Call a POISON CENTER or doctor/physician if you feel unwell.
- P273 Avoid release to the environment.

Hazards not otherwise classified (HNOC): None
by GHS

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonym(s): 1,2-dihydroxyanthraquinone
Formula: C_{14}H_{8}O_{4}
Molecular Weight 240.21 g/mol
CAS-Number [72-48-0]
EC/ REACH Number [200-782-5]
Index-Number Not Available
Hazardous Components Alizarin

Acute toxicity Oral (Category 4)
Acute aquatic toxicity (Category 2)

4. FIRST-AID MEASURES
General Advice Consult a physician. Show this Safety Data Sheet to the medical provider
If Inhaled If breathed in, move person to fresh air.
If not breathing, give artificial respiration. Consult a doctor
In Case of Skin Contact Wash thoroughly with plenty of soap and water.
Consult a physician
In Case of Eye Contact Wash thoroughly with plenty of water for at least 15 minutes
If Swallowed Never give anything by mouth to an unconscious person. Consult a doctor. Rinse mouth with water.
More important symptoms and effects, both acute and delayed indication of any immediate medical attention and special treatment needed

5. FIRE-FIGHTING MEASURES
Suitable Extinguishing Media Water spray, alcohol-resistant foam, dry chemical, carbon dioxide
Special Protective Equipment for Firefighters Wear self-contained breathing apparatus
Hazardous Combustion Products Formed under fire conditions: Carbon oxides

6. ACCIDENTAL RELEASE MEASURES
General Evacuate personnel to safe location
Personal Precautions Wear respiratory protection. Avoid dust formation and breathing vapors/mist/dust/gas. Ensure adequate ventilation
Environmental Precautions Prevent spillage, do not let product enter drains. Place in suitable, closed containers for licensed disposal. Avoid dust formation

7. HANDLING AND STORAGE
Precautions for Safe Handling Avoid contact with skin and eyes. Provide exhaust ventilation in areas where dust if formed
Precautions for Safe Storage Keep container tightly closed and in a dry, well-ventilated place. Recommended storage temperature: Ambient
Incompatibilities None known
8. **EXPOSURE CONTROLS/ PERSONAL PROTECTION**

Contains no substances with occupational exposure limit values

**PPE: Respiratory protection**

Where risk assessment shows air-purifying respirators are appropriate, use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU)

**PPE: Hand Protection**

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal techniques to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices, and wash and dry hands

**PPE: Eye Protection**

Use a face shield and safety glasses. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU)

**PPE: Skin and Body Protection**

Handle with gloves. Wear protective clothing. Choose body protection according to the amount and concentration of the dangerous substance at the work place. When deemed needed according to the concentration and amount of this product, use a complete body suit

9. **PHYSICAL/CHEMICAL PROPERTIES**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Solid</td>
</tr>
<tr>
<td>pH</td>
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</tr>
<tr>
<td>Melting Point/Freezing Point</td>
<td>No Data Available</td>
</tr>
<tr>
<td>Boiling Point</td>
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<tr>
<td>Flash Point</td>
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</tr>
<tr>
<td>Ignition Temperature</td>
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<tr>
<td>Auto-Ignition Temperature</td>
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<tr>
<td>Lower Explosion Limit</td>
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<tr>
<td>Upper Explosion Limit</td>
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<tr>
<td>Vapor Pressure</td>
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</tr>
<tr>
<td>Density</td>
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</tr>
<tr>
<td>Water Solubility</td>
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</tr>
<tr>
<td>Solubility in Other Solvents</td>
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</tr>
<tr>
<td>Partition Coefficient: n-octanol/water</td>
<td>No Data Available</td>
</tr>
<tr>
<td>Optical Rotation</td>
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</tr>
<tr>
<td>Absorbance (290nm, 5% in H₂O)</td>
<td>No Data Available</td>
</tr>
<tr>
<td>Water Content (Loss on Drying)</td>
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</tr>
</tbody>
</table>
10. STABILITY AND REACTIVITY

   Chemical Stability: Stable under recommended storage conditions
   Possibility of Hazardous Reactions: No Data Available
   Conditions to Avoid: No Data Available
   Materials to Avoid: Strong oxidizing agents
   Hazardous Decomposition Products: Carbon oxides

11. TOXICOLOGICAL INFORMATION

   Oral LD$_{50}$: Bird: 316 mg/kg
   Inhalation LC$_{50}$: No Data Available
   Dermal LD$_{50}$: No Data Available
   Intraperitoneal LD$_{50}$: No Data Available
   Intravenous LD$_{50}$: No Data Available
   Subcutaneous LD$_{50}$: No Data Available
   Skin Corrosion/Irritation: No Data Available
   Serious Eye Damage/ Eye Irritation: Rabbit: 500mg/24hr
   Respiratory or Skin Sensitization: No Data Available
   Germ Cell Mutagenicity: No Data Available
   Carcinogenicity: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by IARC
   ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH
   NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP
   OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA
   Reproductive Toxicity: No Data Available
   Specific Target Organ Toxicity: Single Exposure (Globally Harmonized System): No Data Available
   Specific Target Organ Toxicity: Repeated Exposure (Globally Harmonized System): No Data Available
   Aspiration Hazard: No Data Available
   Potential Health Effects: See Section 2, Hazard(s) Identification
   Signs and Symptoms of Exposure: Stomach irregularities, based on human evidence.
   To the best of our knowledge, the chemical, physical, and toxicological properties of this material have not been thoroughly investigated.
   Synergistic Effects: No Data Available
   Additional Information: No Data Available
12. ECOLOGICAL INFORMATION

Toxicity No Data Available
Persistence and Degradability No Data Available
Bio accumulative Potential No Data Available
Mobility in Soil No Data Available
PBT and vPvB Assessment No Data Available

Harmful to aquatic life. An environmental hazard cannot be excluded in the event of unprofessional handling or disposal

13. DISPOSAL CONCENTRATIONS

Product Dispose of product through a licensed disposal company
Contaminated Packaging Dispose of as unused product

14. TRANSPORTATION INFORMATION

DOT (US) Not Dangerous Goods
IMDG Not Dangerous Goods
IATA Not Dangerous Goods

15. REGULATORY INFORMATION

Massachusetts Right to Know Components No components are subject to the Massachusetts Right to Know Act
Pennsylvania Right to Know Components Alizarin CAS-No. [72-48-0]
New Jersey Right to Know Components Alizarin CAS-No. [72-48-0]
California Prop. 65 Components This product does not contain any chemicals known to the State of California to cause birth defects, cancer, or any other reproductive harm
EU Information SDS in accordance with REACH 1907/2006
EC/ REACH Number [200-782-5]
CAS-Number [72-48-0]
Name: Alizarin
Envisaged Registration Deadline: 30/11/2010
See GHS Information under Section 2, Hazard Identification

16. OTHER INFORMATION

Revision Date: 2016-02-23

Full text of H-Statements referred to under sections 2 and 3.
HMIS Rating Health Hazard 1
Chronic Health Hazard 0
Flammability 0
Physical Hazard 0

NFPA Rating Health Hazard 1
Further information
The above information is believed to be correct but does not purport to be all-inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. TOKU-E Company shall not be held liable for any damage resulting from handling or from contact with the above product. Please see reverse side of invoice or packing slip for additional terms and conditions of sale.