1. **IDENTIFICATION**
   - **Product Identifier**: 6-Aminopenicillanic acid
   - **Product Number**: A089
   - **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**: [551-16-6]
   - **EC/REACH Number**: [208-993-4]
   - **Recommended Use**: 6-aminopenicillanic acid can be used as a starting material to synthesize penicillin antibiotics.
   - **Restrictions of USE**: Not for human or animal use

2. **HAZARD(S) IDENTIFICATION**
   - **GHS Classification**
     - Acute oral toxicity (Category 4)
     - Respiratory sensitization (Category 1)
     - Skin sensitization (Category 1)
   - **GHS Label Elements, Including**
     - **H317**: May cause an allergic skin reaction
     - **H334**: May cause allergy or asthma symptoms or breathing difficulties if inhaled
     - **P302+P352**: Wear protective gloves/protective clothing/eye protection/face protection.
     - **P333+P313**: IF SKIN irritation or rash occurs: Get medical advice/attention.
     - **P362**: Take off contaminated clothing and wash before reuse
     - **P285**: In case of inadequate ventilation wear respiratory protection
     - **P304+P341**: IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.
     - **P342+P311**: IF experiencing respiratory symptoms: call a POISON CENTER or doctor/physician.
     - **P501**: Dispose of contents/container to proper waste container
3. COMPOSITION/INFORMATION ON INGREDIENTS
Synonym(s)  
6-APA  
6-APS  
Penicin  
Penin  
Phenacyl 6-aminopenicillinate
Formula  
\( \text{C}_8\text{H}_{12}\text{N}_2\text{O}_3\text{S} \)
Molecular Weight  
216.26 g/mol
CAS-Number  
[551-16-6]
EC/ REACH Number  
[208-993-4]
Hazardous Components  
6-Aminopenicillanic acid  
Acute oral toxicity (Category 4)  
Respiratory sensitization (Category 1)  
Skin sensitization (Category 1)

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 and Nitrogen oxides, Hydrogen sulfide, 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
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: 2-8°C.

**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>White or almost white crystalline powder</td>
</tr>
<tr>
<td>pH</td>
<td>3.5-4.5</td>
</tr>
<tr>
<td>Melting Point/Freezing Point</td>
<td>No Data Available</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>No Data Available</td>
</tr>
<tr>
<td>Flash Point</td>
<td>No Data Available</td>
</tr>
<tr>
<td>Ignition Temperature</td>
<td>No Data Available</td>
</tr>
<tr>
<td>Auto-Ignition Temperature</td>
<td>No Data Available</td>
</tr>
</tbody>
</table>
Lower Explosion Limit No Data Available
Upper Explosion Limit No Data Available
Vapor Pressure No Data Available
Density No Data Available
Water Solubility No Data Available
Solubility in Other Solvents No Data Available
Partition Coefficient: n-octanol/water No Data Available
Optical Rotation +265.0° - +285.0°
Absorbance (425nm) Less than 0.025
Water Content (Loss on Drying) No Data Available

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 and Nitrogen oxides, Hydrogen sulfide

11. TOXICOLOGICAL INFORMATION
Oral LD₅₀ No Data Available
Inhalation LC₅₀ No Data Available
Dermal LD₅₀ No Data Available
Intraperitoneal LD₅₀ >1000 mg/kg
Intravenous LD₅₀ No Data Available
Subcutaneous LD₅₀ No Data Available
Skin Corrosion/Irritation No Data Available
Serious Eye Damage/ Eye Irritation No Data Available
Respiratory or Skin Sensitization No Data Available
Germ Cell Mutagenicity No Data Available
Carcinogenicity
IARC: 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 No Data Available
β-lactams are a broad class of antibiotics and include penicillins and cephalosporins. Some individuals experience adverse immunological responses or allergic reactions to β-lactam antibiotics. Because of the similarity in structure between penicillins and cephalosporins, those who are allergic to one class of agents may manifest cross-allergenicity when exposed to a member of another class.

TOKU-E Company assumes this chemical has the potential to induce an allergic reaction in some individuals. To the best of our knowledge, the correlation between this specific material and respiratory or skin sensitization has not been thoroughly investigated.
15. REGULATORY INFORMATION

Massachusetts Right to Know Components
No components are subject to the Massachusetts Right to Know Act

Pennsylvania Right to Know Components
6-Aminopenicillanic acid
CAS-No. [551-16-6]

New Jersey Right to Know Components
6-Aminopenicillanic acid
CAS-No. [551-16-6]

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 [208-993-4]
CAS-Number [551-16-6]
Name: 6-Aminopenicillanic acid
Envisaged Registration Deadline: 30/11/2010
See GHS Information under Section 2, Hazard Identification

16. OTHER INFORMATION

Revision Date: 2016-02-18

Full text of H-Statements referred to under sections 2 and 3.

HMIS Rating
Health Hazard 0
Chronic Health Hazard 0
Flammability 0
Physical Hazard 0

NFPA Rating
Health Hazard 0
Fire Hazard 0
Reactivity Hazard 0

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.