**Section 1. Product and Company Identification**

<table>
<thead>
<tr>
<th><strong>Product Name</strong></th>
<th>Tenuazonic Acid</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Product ID</strong></td>
<td>T1952</td>
</tr>
<tr>
<td><strong>Chemical Name</strong></td>
<td>3-Pyrrolin-2-one, 3-acetyl-5-sec-butyl-4-hydroxy-, L-L-Tenuazonic acid</td>
</tr>
<tr>
<td><strong>Supplier</strong></td>
<td>LKT Laboratories, Inc</td>
</tr>
<tr>
<td></td>
<td>545 Phalen Blvd.</td>
</tr>
<tr>
<td></td>
<td>St. Paul, MN 55130 USA</td>
</tr>
<tr>
<td></td>
<td>Ph: 651-644-8424 Fax: 651-644-8357</td>
</tr>
<tr>
<td></td>
<td><a href="http://www.lktlabs.com">www.lktlabs.com</a> - <a href="mailto:getinfo@lktlabs.com">getinfo@lktlabs.com</a></td>
</tr>
<tr>
<td><strong>Emergency Phone #</strong></td>
<td>1-800-424-9300</td>
</tr>
</tbody>
</table>

**Section 2. Hazards Identification**

**GHS Classification**

Acute toxicity, Oral (Category 3), H301

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**GHS Label elements including precautionary statements**

**Pictogram**

- [Image of a pictogram]

**Signal word**

Danger

**Hazard and precautionary statements**

- **Hazard statements**
  - H301 - Toxic if swallowed.

- **Precautionary statements**
  - P264 - Wash skin thoroughly after handling.
  - P270 - Do not eat, drink or smoke when using this product.
  - P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor.
  - P321 - Specific treatment (see supplemental first aid instructions on this label).
  - P330 - Rinse mouth.
  - P405 - Store locked up.
  - P501 - Dispose of contents/container to an approved waste disposal plant.

**HMIS Classification**

- Health hazard: 2
- Chronic health hazard: *
- Flammability: 0
- Physical hazard: 0

**NFPA Rating**

- Health hazard: 2
- Fire hazard: 0
- Reactivity hazard: 0

**Potential Health Effects**

- Inhalation - May be harmful if inhaled. May cause respiratory tract irritation.
- Skin - May be harmful if absorbed through skin. May cause skin irritation.
- Eyes - May cause eye irritation.
Section 3. Composition/Information on Ingredients

Substances
Ingredient: Tenuazonic Acid Percent: 100
Formula C_{10}H_{15}NO_{3} Formula Wt. 197.23
CAS No. 610-88-8 EC No.

Section 4. First Aid Measures

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

Eye Contact
Flush eyes with water as a precaution.

Skin Contact
Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

Inhalation
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

Ingestion
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

Section 5. Firefighting Measures

Flash Point
Not available.

Extinguishing Media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Firefighting Procedures
Wear self-contained breathing apparatus for firefighting if necessary.

Unusual Fire Hazards
Carbon oxides, nitrogen oxides (NOx).

Section 6. Accidental Release Measures

Personal Precautions
Wear respiratory protection. Avoid dust formation. Avoid breathing dust, vapors, mist, or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

Environmental Precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Methods and materials for containment and cleanup
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

Section 7. Handling and Storage

Handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed.

Storage Conditions
Keep container tightly closed in a dry and well-ventilated place. Recommended storage temperature: 4°C

Hazardous Decomposition Products
Hazardous decomposition products formed under fire conditions. - Nature of decomposition products not known.

Other Remarks
Storage class (TRGS 510): 6. 1D: Noncombustible, acute toxic Cat. 3/ toxic hazardous materials or hazardous materials causing chronic effect.
Section 8. Exposure Controls/Personal Protection

Personal protective equipment

EXPOSURE CONTROLS
Contains no substances with occupational exposure limit values.
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

PERSONAL PROTECTION
Eye/face protection: 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).

Skin protection: Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove’s outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Body protection: Complete suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection: Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N99 (US) or type P2 (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).

Section 9. Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Physical State</th>
<th>Solid.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>Blue green powder</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>Not available.</td>
</tr>
<tr>
<td>Volatility</td>
<td>Not available.</td>
</tr>
<tr>
<td>Melting Point</td>
<td>Not available.</td>
</tr>
<tr>
<td>Density</td>
<td>Not available.</td>
</tr>
<tr>
<td>Solubility</td>
<td>Soluble in DMSO and ethanol.</td>
</tr>
<tr>
<td>pH</td>
<td>Not available.</td>
</tr>
<tr>
<td>Flash Point</td>
<td>Not available.</td>
</tr>
<tr>
<td>Ignition temperature</td>
<td>Not available.</td>
</tr>
<tr>
<td>Lower explosion limit</td>
<td>Not available.</td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>Not available.</td>
</tr>
<tr>
<td>Upper explosion limit</td>
<td>Not available.</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>Not available.</td>
</tr>
<tr>
<td>Water solubility</td>
<td>Not available.</td>
</tr>
<tr>
<td>Odor</td>
<td>Not available.</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>Not available.</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>Not available.</td>
</tr>
<tr>
<td>Relative vapor density</td>
<td>Not available.</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

Section 10. Stability and Reactivity

Stability
Stable under recommended storage conditions.

Materials To Avoid
Strong oxidizing agents.

Hazardous Decomposition Products
Hazardous decomposition products formed under fire conditions. - Nature of decomposition products not known.
Section 11. Toxicological Information

### Oral LD50
- **Mouse** - 225 mg/kg

### Inhalation LC50
- Not available.

### Dermal LD50
- Not available.

### Other information on acute toxicity
- Not available.

### Skin corrosion/irritation
- Not available.

### Serious eye damage/irritation
- Not available.

### Respiratory or skin sensitization
- Not available.

### Germ cell mutagenicity
- Not available.

### Reproductive Toxicity
- Laboratory experiments have shown teratogenic effects.

### Aspiration Hazard
- Not available.

### Specific organ toxicity single exposure (GHS)
- Not available.

### Specific organ toxicity repeated exposure (GHS)
- Not available.

### Teratogenicity
- Not available.

### Additional Information
- **RTECS**: Not available.
- **OSHA**: Not available.
- **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.
- **IARC**: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible, or confirmed human carcinogen by IARC.

### Potential Health Effects
- **Inhalation**: May be harmful if inhaled. May cause respiratory tract irritation.
- **Skin**: May be harmful if absorbed through skin. May cause skin irritation.
- **Eyes**: May cause eye irritation.
- **Ingestion**: May be harmful if swallowed.

### Section 12. Ecological Information

### Toxicity
- Not available.

### Mobility in soil
- Not available.

### PBT and vPvB assessment
- PBT/vPvB assessment not available as chemical safety assessment not required/not
Section 13. Disposal Considerations

**Waste Disposal**
Dispose of material according to all federal, state and local regulations. Offer material to a licensed, professional waste disposal company to dispose of as unused product. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Section 14. Transport Information

**DOT (US)**
- UN number: 2811
- Class: 6.1
- Packing Group: III
- Proper shipping name: Toxic solid, organic, n.o.s. (Tenuazonic acid)
- Poison inhalation hazard: No

**IATA**
- UN number: 2811
- Class: 6.1
- Packing Group: III
- Proper shipping name: Toxic solid, organic, n.o.s. (Tenuazonic acid)

**IMDG**
- UN number: 2811
- Class: 6.1
- Packing Group: III
- EMS NO: F-A, S-A
- Proper shipping name: TOXIC SOLID, ORGANIC, N.O.S. (Tenuazonic acid)

Further Information

Section 15. Regulatory Information

**SARA 302 Components**
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**SARA 313 Components**
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**SARA 311/312 Components**
Acute health hazard, chronic health hazard.

**Massachusetts Right To Know Components**
No components are subject to the Massachusetts Right to Know Act.

**Pennsylvania Right To Know Components**
Tenuazonic Acid  CAS #: 610-88-8  Revision Date:

**New Jersey Right To Know Components**
Tenuazonic Acid  CAS #: 610-88-8  Revision Date:

**California Prop 65 Components**
This product does not contain any chemicals known to the State of California to cause cancer, birth defects or any other reproductive harm.

Section 16. Other Information

**Other information**
The information in this document is believed to be correct but is not necessarily complete. LKT does not guarantee the accuracy of the information. The burden of verifying the information in this document rests solely upon the user.