1 - Product and Company Information

Product Name: A-KETOISOVALERIC ACID SODIUM
Product Number: K0128

Company: Sigma-Aldrich Chemie BV
Postbus 27
3330 AA Zwijndrecht
Netherlands

Technical Phone #: 31-78-620-5411
Fax: 31-78-620-5421
E-mail Address: eurtechserv@sial.com
Emergency Phone #: 112

2 - Hazards Identification

SPECIAL INDICATION OF HAZARDS TO HUMANS AND THE ENVIRONMENT
Not hazardous according to Directive 67/548/EEC.

3 - Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Product Name</th>
<th>CAS #</th>
<th>EC no</th>
<th>Annex I</th>
<th>Index Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-METHYL-2-OXOBUTANOIC ACID, SODIUM SALT</td>
<td>3715-29-5</td>
<td>223-062-2</td>
<td>None</td>
<td></td>
</tr>
</tbody>
</table>

Formula: C5H7NaO3
Molecular Weight: 138,100 AMU
Synonyms:
- alpha-Ketoisovaleric acid sodium salt;
- Ketovaline sodium salt;
- Sodium 3-methyl-2-oxobutanoic acid

4 - First Aid Measures

AFTER INHALATION
If inhaled, remove to fresh air. If breathing becomes difficult, call a physician.

AFTER SKIN CONTACT
In case of contact, immediately wash skin with soap and copious amounts of water.

AFTER EYE CONTACT
In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

AFTER INGESTION
If swallowed, wash out mouth with water provided person is conscious. Call a physician.
5 - Fire Fighting Measures

EXTINGUISHING MEDIA
Suitable: Water spray. Carbon dioxide, dry chemical powder, or appropriate foam.

SPECIAL RISKS
Specific Hazard(s): Emits toxic fumes under fire conditions.

SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS
Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

6 - Accidental Release Measures

PROCEDURE(S) OF PERSONAL PRECAUTION(S)
Exercise appropriate precautions to minimize direct contact with skin or eyes and prevent inhalation of dust.

METHODS FOR CLEANING UP
Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

7 - Handling and Storage

HANDLING
Directions for Safe Handling: Avoid inhalation. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

STORAGE
Conditions of Storage: Keep tightly closed.
Store at 2-8°C

8 - Exposure Controls / Personal Protection

ENGINEERING CONTROLS
Safety shower and eye bath. Mechanical exhaust required.

GENERAL HYGIENE MEASURES
Wash thoroughly after handling.

PERSONAL PROTECTIVE EQUIPMENT
Respiratory Protection: Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks.
Hand Protection: Protective gloves.
Eye Protection: Chemical safety goggles.

9 - Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
<th>At Temperature or Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Physical State: Solid</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Color: White</td>
<td></td>
</tr>
<tr>
<td>Property</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
pH                      N/A
BP/BP Range             N/A
MP/MP Range             220,000 °C
Flash Point             N/A
Flammability            N/A
Autoignition Temp       N/A
Oxidizing Properties    N/A
Explosive Properties    N/A
Explosion Limits        N/A
Vapor Pressure          N/A
Partition Coefficient   N/A
Viscosity               N/A
Vapor Density           N/A
Saturated Vapor Conc.   N/A
Evaporation Rate        N/A
Bulk Density            N/A
Decomposition Temp.     N/A
Solvent Content         N/A
Water Content           N/A
Surface Tension         N/A
Conductivity            N/A
Miscellaneous Data      N/A
Solubility              N/A

10 - Stability and Reactivity

STABILITY
 Stable: Stable.
 Materials to Avoid: Strong oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS
 Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide.

HAZARDOUS POLYMERIZATION
 Hazardous Polymerization: Will not occur

11 - Toxicological Information

SIGNS AND SYMPTOMS OF EXPOSURE
 To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

ROUTE OF EXPOSURE
 Skin Contact: May cause skin irritation.
 Skin Absorption: May be harmful if absorbed through the skin.
 Eye Contact: May cause eye irritation.
 Inhalation: Material may be irritating to mucous membranes and upper respiratory tract. May be harmful if inhaled.
 Ingestion: May be harmful if swallowed.

12 - Ecological Information

No data available.

13 - Disposal Considerations

SUBSTANCE DISPOSAL
 Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an
afterburner and scrubber. Observe all federal, state, and local environmental regulations.

14 - Transport Information

RID/ADR
   Non-hazardous for road transport.

IMDG
   Non-hazardous for sea transport.

IATA
   Non-hazardous for air transport.

15 - Regulatory Information

Not hazardous according to Directive 67/548/EEC.

COUNTRY SPECIFIC INFORMATION

Germany
   WGK: 3
   Self-Classification

16 - Other Information

WARRANTY
   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. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.
Copyright 2010 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.

DISCLAIMER
   For R&D use only. Not for drug, household or other uses.