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**Section 1. Product and Company Identification**

**Product Name** Enniatin A1  
**Product ID** E537333  
**Chemical Name (Synonyms)** cyclo[N(Me)Ile-D-OVal-N(Me)Ile-D-OVal-N(Me)Val-D-OVal]  
**Supplier** LKT Laboratories, Inc  
545 Phalen Blvd.  
St. Paul, MN 55130 USA  
Ph: 651-644-8424 Fax: 651-644-8357  
www.lktlabs.com - getinfo@lktlabs.com

**Emergency Phone #** 1-800-424-9300

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**Section 2. Hazards Identification**

**GHS Classification** Acute toxicity, Oral (Category 3), H301  
Acute toxicity, Inhalation (Category 3), H331  
Acute toxicity, Skin (Category 3), H311

**GHS Label elements including precautionary statements**

**Pictogram**



**Signal word** Danger

**Hazard and precautionary statements**

**Hazard statement**

H301 + H311 + H331 - Toxic if swallowed, in contact with skin or if inhaled.

**Precautionary statements**

P261 - Avoid breathing dust, fumes,, gas, mist, vapors, spray.  
P264 - Wash skin thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P271 Use only outdoors or in a well-ventilated area.  
P280 - Wear protective gloves and protective clothing.  
P301 + P310 + P330 - IF SWALLOWED: Immediately call a POISON CENTER/doctor. Rinse mouth.  
P302 + P352 - IF ON SKIN: Wash with plenty of water.  
P304+340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
P312 Call a POISON CENTER or doctor/ physician if you feel unwell.  
P361: Remove all contaminated clothing.  
P363 Wash contaminated clothing before reuse.  
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.  
P405 - Store locked up.  
P501 - Dispose of contents/ container to an approved waste disposal plant.

**HMIS Classification** Health hazard: 2  
Chronic health hazard: 0  
Flammability: 0  
Physical hazard: 0

**NFPA Rating** Health hazard: 2  
Fire hazard: 0  
Reactivity hazard: 0

**Potential Health Effects** Inhalation - Acute toxicity. Toxic if inhaled. May cause respiratory tract irritation.  
Skin - Acute toxicity. Toxic in contact with skin. Harmful if absorbed through skin. May cause skin irritation.  
Eyes - May cause eye irritation.

Ingestion - Acute toxicity. Toxic if swallowed.

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### Section 3. Composition/Information on Ingredients

|                   |                                                               |                    |        |
|-------------------|---------------------------------------------------------------|--------------------|--------|
| <b>Substances</b> | Ingredient: Enniatin A1                                       | Percent: 98-100    |        |
| <b>Formula</b>    | C <sub>35</sub> H <sub>61</sub> N <sub>3</sub> O <sub>9</sub> | <b>Formula Wt.</b> | 667.89 |
| <b>CAS No.</b>    | 4530-21-6                                                     | <b>EC No.</b>      |        |

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### Section 4. First Aid Measures

|                       |                                                                                                                 |
|-----------------------|-----------------------------------------------------------------------------------------------------------------|
| <b>General advice</b> | Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.       |
| <b>Eye Contact</b>    | Flush eyes with water as a precaution.                                                                          |
| <b>Skin Contact</b>   | Wash off with soap and plenty of water.                                                                         |
| <b>Inhalation</b>     | If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician. |
| <b>Ingestion</b>      | Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.             |

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### Section 5 . Firefighting Measures

|                                |                                                                          |
|--------------------------------|--------------------------------------------------------------------------|
| <b>Flash Point</b>             | Not available.                                                           |
| <b>Extinguishing Media</b>     | Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. |
| <b>Firefighting Procedures</b> | Wear self-contained breathing apparatus for firefighting if necessary.   |
| <b>Unusual Fire Hazards</b>    | Carbon oxides, nitrogen oxides (NOx).                                    |

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### Section 6. Accidental Release Measures

|                                                          |                                                                                                                                                         |
|----------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Personal Precautions</b>                              | Wear respiratory protection. Avoid dust formation. Avoid breathing vapors, mist, or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. |
| <b>Environmental Precautions</b>                         | Prevent further leakage or spillage if safe to do so. Do not let product enter drains.                                                                  |
| <b>Methods and materials for containment and cleanup</b> | Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.                              |

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### Section 7. Handling and Storage

|                                         |                                                                                                                                                 |
|-----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Handling</b>                         | Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. |
| <b>Storage Conditions</b>               | Keep container tightly closed in a dry and well-ventilated place.<br>Recommended storage temperature: -20°C                                     |
| <b>Hazardous Decomposition Products</b> | Not available.                                                                                                                                  |
| <b>Other Remarks</b>                    |                                                                                                                                                 |

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## Section 8. Exposure Controls/Personal Protection

### Personal protective equipment

#### EXPOSURE CONTROLS

Contains no substances with occupational exposure limit values.  
General industrial hygiene practice.

#### PERSONAL PROTECTION

**Eye/face protection:** 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:** Choose body protection in relation to its type, to the concentration and amount of dangerous substances and to the specific workplace. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Respiratory protection:** 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. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

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## Section 9. Physical and Chemical Properties

|                                               |                                                                   |                                 |                |
|-----------------------------------------------|-------------------------------------------------------------------|---------------------------------|----------------|
| <b>Physical State</b>                         | Solid.                                                            | <b>Color</b>                    | White powder   |
| <b>Boiling Point</b>                          | Not available.                                                    | <b>Volatility</b>               | Not available. |
| <b>Melting Point</b>                          | Not available.                                                    | <b>Density</b>                  | Not available. |
| <b>Solubility</b>                             | Soluble in ethanol, methanol, DMF or DMSO.<br>Insoluble in water. | <b>pH</b>                       | Not available. |
| <b>Flash Point</b>                            | Not available.                                                    | <b>Ignition temperature</b>     | Not available. |
| <b>Lower explosion limit</b>                  | Not available.                                                    | <b>Autoignition temperature</b> | Not available. |
| <b>Upper explosion limit</b>                  | Not available.                                                    | <b>Vapor pressure</b>           | Not available. |
| <b>Water solubility</b>                       | Insoluble in water.                                               | <b>Odor</b>                     | Not available. |
| <b>Partition coefficient: n-octanol/water</b> | Not available.                                                    | <b>Odor Threshold</b>           | Not available. |
| <b>Relative vapor density</b>                 | Not available.                                                    | <b>Evaporation rate</b>         | Not available. |

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## Section 10. Stability and Reactivity

**Stability** Stable under recommended storage conditions.

**Materials To Avoid** Strong oxidizing agents.

**Hazardous Decomposition Products** Not available.

**Possibility of hazardous reactions** Not available.

**Conditions to avoid** Not available.

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### Section 11. Toxicological Information

**Oral LD50** Not available.

**Skin corrosion/irritation** Not available.

**Inhalation LC50** Not available.

**Serious eye damage/irritation** Not available.

**Dermal LD50** Not available.

**Respiratory or skin sensitization** Not available.

**Other information on acute toxicity** Not available.

**Germ cell mutagenicity** Not available.

**Reproductive Toxicity** Not available.

**Aspiration Hazard** Not available.

**Specific organ toxicity single exposure (GHS)** Not available.

**Synergistic effects** Not available.

**Specific organ toxicity repeated exposure (GHS)** Not available.

**Additional Information** Not available.

**Teratogenicity** Not available.

**Signs and symptoms of exposure** Not available.

**Potential Health Effects** Inhalation - Acute toxicity. Toxic if inhaled. May cause respiratory tract irritation.  
Skin - Acute toxicity. Toxic in contact with skin. Harmful if absorbed through skin. May cause skin irritation.  
Eyes - May cause eye irritation.  
Ingestion - Acute toxicity. Toxic if swallowed.

**Carcinogenicity** **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.  
**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.

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### 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

conducted.

**Persistence and degradability** Not available.

**Other adverse effects** Not available.

**Bioaccumulative potential** Not available.

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### 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.

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### Section 14. Transport Information

**DOT (US)** UN number: 3462 Class: 6.1 Packing Group: III  
Proper Shipping Name: Toxins, Extracted from living sources, solid, n.o.s.

**IATA** UN number: 3462 Class: 6.1 Packing Group: III  
Proper Shipping Name: Toxins, Extracted from living sources, solid, n.o.s.

**IMDG** UN number: 3462 Class: 6.1 Packing Group: III EMS-No: F-A, S-A  
Proper Shipping Name: Toxins, Extracted from living sources, solid, n.o.s.

#### Further Information

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### Section 15. Regulatory Information

#### Reach No.

**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** No SARA hazards.

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

**Pennsylvania Right To Know Components** Enniatin A1 CAS #: 4530-21-6 Revision Date:

**New Jersey Right To Know Components** Enniatin A1 CAS #: 4530-21-6 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.

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### 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.

**Updated** 7/28/2020

For emergencies in the USA, call  
CHEMTREC 800-424-9300