1. IDENTIFICATION

Product Identifier: Polymyxin E1 sulfate, EvoPure®
Product Number: P055
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: [7722-44-3] (free base)
EC/REACH Number: Not Available
Recommended Use: Polymyxin E1 and E2 (colistin A and B, respectively) can be used individually to study and compare in vitro antimicrobial activity with colistin (polymyxin E complex) or other polymyxins
Restrictions of Use: Not for human or animal use

2. HAZARD(S) IDENTIFICATION

GHS Classification: Acute toxicity, oral (Category 3)
GHS Label Elements, Including:

Signal Word: Danger

Hazard Statements:
H301 Toxic if swallowed

Precautionary Statements:
P264 Wash hands/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/physician
P321 Specific treatment, see applicable response statements on this label
P330 Rinse mouth
P405 Store locked up
P501 Dispose of contents/container in accordance with governmental regulation

Hazards not otherwise classified (HNOC): No Data Available by GHS

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonym(s): Colistin A
Formula: \( C_{53}H_{100}N_{16}O_{13} \cdot xH_2SO_4 \) (lot specific)

Molecular Weight: 1169.46 g/mol (Free base. Actual molecular weight shown on lot specific certificate of analysis).

CAS-Number: [7722-44-3] (free base)

EC/REACH Number: Not Available

Hazardous Components: Polymyxin E1 sulfate, EvoPure®

Acute toxicity, oral (Category 3)

4. FIRST-AID MEASURES

General Advice: Consult a doctor/physician if exposed - additional medical care may be required. Show this Safety Data Sheet to the medical provider.

If Inhaled: If inhaled, move to fresh air. If not breathing, give artificial respiration and immediately call local emergency telephone number.

In Case of Skin Contact: Wash skin thoroughly with soap and water.

In Case of Eye Contact: Flush eye with water. After initial flush, remove any contact lenses and continue flushing for at least 15 minutes.

If Swallowed: Rinse mouth with water. Immediately call a doctor, physician, or poison control center. Never give anything by mouth to an unconscious person.

Specific Treatment: Please see Section 2 precautionary statements and/or Section 11.

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, nitrogen, and sulfur oxides

6. ACCIDENTAL RELEASE MEASURES

General: Evacuate personnel to a safe location. Use appropriate personal protective equipment while in contact with product. Avoid dust formation. Ensure adequate ventilation.

Personal Precautions: Prevent contamination of skin, eyes and clothing with appropriate protective equipment (Section 8). Wear respiratory protection.

Environmental Precautions: Recover waste, if possible, and place in suitable closed container for licensed disposal. Prevent spillage - do not let product enter drains.

7. HANDLING AND STORAGE

Precautions for Safe Handling: Wear appropriate protective clothing/gear to prevent contact with skin and eyes. Provide exhaust ventilation or respiratory protection in areas where
Precautions for Safe Storage

Store in a tightly closed container. Protect from humidity.
Recommended storage temperature: -20°C

Incompatibilities
No Data Available

8. EXPOSURE CONTROLS/ PERSONAL PROTECTION
Contains no substances with occupational exposure limit values

OSHA Permissible Exposure Limits
No Data Available
NIOSH Recommended Exposure Limits
No Data Available
ACGIH Threshold Limit Values
No Data Available

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

Appearance
Powder
Lower Flammability/Explosion Limit
No Data Available
Upper Flammability/Explosion Limit
No Data Available
Odor
No Data Available
Vapor Pressure
No Data Available
Odor Threshold
No Data Available
Vapor Density
No Data Available
pH
No Data Available
<table>
<thead>
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<tr>
<td>Relative Density</td>
<td>No Data Available</td>
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<tr>
<td>Melting Point/Freezing Point</td>
<td>No Data Available</td>
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<tr>
<td>Water Solubility</td>
<td>Soluble</td>
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<tr>
<td>Solubility in Other Solvents</td>
<td>Soluble in ethanol</td>
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<tr>
<td>Solubility in methanol</td>
<td>Soluble in methanol</td>
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<tr>
<td>Boiling Point and Range</td>
<td>No Data Available</td>
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<tr>
<td>Flash Point</td>
<td>No Data Available</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No Data Available</td>
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<tr>
<td>Flammability (solid, gas)</td>
<td>No Data Available</td>
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<tr>
<td>Partition Coefficient: n-octanol/water</td>
<td>No Data Available</td>
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<tr>
<td>Ignition Temperature</td>
<td>No Data Available</td>
</tr>
<tr>
<td>Auto-Ignition Temperature</td>
<td>No Data Available</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>No Data Available</td>
</tr>
<tr>
<td>Viscosity</td>
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<tr>
<td>Density</td>
<td>No Data Available</td>
</tr>
<tr>
<td>Optical Rotation</td>
<td>No Data Available</td>
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<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**
    Formed under fire conditions: carbon, nitrogen, and sulfur oxides

11. **TOXICOLOGICAL INFORMATION**

    **Oral LD₅₀**
    Rat: 121 mg/kg
    Mouse: 793 mg/kg

    **Inhalation LC₅₀**
    No Data Available

    **Dermal LD₅₀**
    No Data Available

    **Intraperitoneal LD₅₀**
    No Data Available

    **Intravenous LD₅₀**
    No Data Available

    **Subcutaneous LD₅₀**
    Rat: 72 mg/kg

    **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**
    This substance has not been identified as a potential carcinogen within the National Toxicology Program Report on Carcinogens or within the International Agency for Research on Cancer Monograph.

    **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 Heath Effects See Section 2, Hazard(s) Identification
Signs and Symptoms of Exposure 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

In the absence of complete ecological information, treat product as environmentally hazardous. Use proper storage, handling, and disposal to prevent unintentional release into the environment.

13. DISPOSAL CONCENTRATIONS
Product Dispose of product through a licensed disposal company.
Contaminated Packaging Dispose of as unused product.

14. TRANSPORTATION INFORMATION
DOT (US) UN Number: 2811 Class 6.1, Packing group III
Proper shipping name: Toxic solids, organic, n.o.s.
(Polymyxin E1 sulfate)
Marine pollutant: No
Poison inhalation hazard: no
IMDG UN Number: 2811 Class 6.1, Packing group III
Proper shipping name: TOXIC SOLID, ORGANIC, N.O.S.
(Polymyxin E1 sulfate)
EMS-no. F-A, S-A
Marine pollutant: No
IATA UN Number: 2811 Class 6.1, Packing group III
Proper shipping name: Toxic solid, organic, n.o.s. (Polymyxin E1 sulfate)

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

SARA 313 Components
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 Hazards
Acute health hazard, chronic health hazard
The above components are subject to reporting levels established by SARA Title III, Section 311/312

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

Pennsylvania Right to Know
No components are subject to the Pennsylvania Right to Know Act

New Jersey Right to Know
No components are subject to the New Jersey Right to Know Act

California Prop. 65 Components
No
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
A registration number is not available for this substance or its uses are exempted from registration, or the registration is envisaged for a later registration deadline.
See GHS Information under Section 2, Hazard Identification

16. OTHER INFORMATION
Revision Date: 2016-05-16

HMIS Rating
Health Hazard 2
Chronic Health Hazard Y
Flammability 0
Physical Hazard 0

NFPA Rating
Health Hazard 2
Fire Hazard 0
Reactivity Hazard 0

This safety data sheet represents TOKU-E Company’s current understanding of the hazards associated with this product. The stated hazard information is based on existing experimental data and is not guaranteed to be all-inclusive. TOKU-E Company strives to maintain current and comprehensive safety information but recognizes that this safety data sheet may require revision as new information becomes available. TOKU-E Company shall not be held liable for damage or injury resulting from contact, handling, or storage of this product.