SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Product Identifier: Concanamycin A
Product Number: C182
CAS Number: [80890-47-7]
EC Number: [620-709-4]
REACH Registration Number: A registration number is not available for this substance as the substance or its uses are exempted from registration, the annual tonnage does not require a registration, or the registration is envisaged for a later registration deadline.

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified Uses: For research use only - restricted to professional users.
Uses Advised Against: Not for human or animal use

1.3 Details of the supplier of the safety data sheet

Company: TOKU-E Company
715 W Orchard Dr. Suite 3
Bellingham, WA 98225
Phone Number: (360)734-1789
E-mail Address: info@toku-e.com
Safety Data Sheet Issued by: TOKU-E Company (USA)

1.4 Emergency telephone number

Emergency Phone Number (Internat.): +1 (352) 353-3500 (INFOTRAC, 24-Hour Number)
Emergency Phone Number (US Only): 1 (800) 535-5053 (INFOTRAC, 24-Hour Number)

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Acute Toxicity - Oral (Category 2), H300
Acute Toxicity - Dermal (Category 2), H310
Serious Eye Irritation (Category 2), H319
Acute Toxicity - Inhalation (Category 1), H330

For the full text of the H-Statements mentioned in this section, see Section 16.

2.2 Label elements

Pictogram(s):

Signal Word: Danger
Hazard Statement(s)
H300   Fatal if swallowed
H310   Fatal in contact with skin
H319   Causes serious eye irritation
H330   Fatal if inhaled

Precautionary Statement(s)
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
P262    Do not get in eyes, on skin, or on clothing.
P280    Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352    IF ON SKIN: Wash with plenty of water/soap
P310    Immediately call a POISON CENTER/doctor.
P361+P364    Take off immediately all contaminated clothing and wash it before reuse
P305+P351+    IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313    IF eye irritation persists: Get medical advice/attention.
P260    Do not breathe dust/fumes/gas/mist/vapors/spray.
P271    Use only outdoors or in a well-ventilated area.
P284    In case of inadequate ventilation wear respiratory protection.
P304+P340    IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P320    Specific treatment is urgent (see Section 4)
P403+P233    Store in a well-ventilated place. Keep container tightly closed

2.3 Other hazards
No Data Available

Hazards not otherwise classified (HNOC) or not covered by GHS
No data available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances
Synonym(s) : Folimycin, TAN 1323B
Formula : C_{46}H_{75}NO_{14}
Molecular Weight : 866.091 g/mol
CAS Number : [80890-47-7]
EC Number : [620-709-4]


<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
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<tr>
<td>Concanamycin A</td>
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<td></td>
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<tr>
<td>CAS Number [80890-47-7]</td>
<td>Acute Tox. 2, H300</td>
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</tr>
<tr>
<td></td>
<td>Acute Tox. 2, H310</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Eye Irrit. 2, H319</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Acute Tox. 1, H330</td>
<td></td>
</tr>
<tr>
<td>EC Number [620-709-4]</td>
<td>≤ 100%</td>
<td></td>
</tr>
</tbody>
</table>

For the full text of the H-Statements mentioned in this section, see Section 16.
SECTION 4: FIRST-AID MEASURES

4.1 Description of 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. Consult a physician.

In Case of Skin Contact
Wash skin thoroughly with soap and water. Remove any contaminated clothing. Consult a physician.

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.

4.2 Most important symptoms/effects, acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11.

4.3 Indication of immediate medical attention and special treatment needed, if necessary
No Data Available

SECTION 5: FIRE-FIGHTING MEASURES

5.1 Extinguishing media
Suitable Extinguishing Media
Water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Hazardous Combustion Products
Formed under fire conditions: carbon and nitrogen oxides

5.3 Advice for firefighters
Wear self-contained breathing apparatus if necessary.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Consult the safety measures listed in Section 7 and 8. Use personal protective equipment. Avoid direct contact with spilled substances. Ensure adequate ventilation. Avoid breathing dust, vapors, mist or gas. Avoid dust formation. In the event of a spill, evacuate personnel to safe areas.

For personal protection see Section 8.

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

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

6.4 Reference to other sections
Refer to section 8 for exposure control and personal protection. Refer to section 13 for disposal information.
SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid exposure: obtain special instructions before use. Provide appropriate exhaust ventilation at places where dust is formed. Avoid contact with skin and eyes.
For precautions see section 2.2

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place. Protect from humidity.
Recommended storage temperature: -20 °C

Incompatibilities:
Strong oxidizing agents

7.3 Specific end use(s)
Refer to section 1.2

SECTION 8: EXPOSURE CONTROLS/ PERSONAL PROTECTION

8.1 Control parameters
Components with workplace control parameters:
Contains no substances with occupational exposure limit values.

8.2 Exposure controls
Appropriate Engineering Controls:
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling this product.

Personal Protective Equipment (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).

Skin 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. Wash and dry hands.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the selected EN 374 derived from it.

Full Contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: > 480 min
Material tested: Dermatril® (KCL 740, Size M)

Splash Contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: > 480 min
Material tested: Dermatril® (KCL 740, Size M)

Data source: KCL GmbH, D-36124 Eichenzell,
phone +49 (0)6659 87300, email sales@kcl.de
Test method: EN374
Eye/Face 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).

Body Protection
Wear protective clothing. The type of protective equipment must be selected according to the concentration of the dangerous substance at the specific work place.

Control of Environmental Exposure:
Do not let product enter drains. Discharge into the environment must be avoided.

SECTION 9: PHYSICAL/CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>White solid</td>
</tr>
<tr>
<td>Odor</td>
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</tr>
<tr>
<td>Odor Threshold</td>
<td>No Data Available</td>
</tr>
<tr>
<td>pH</td>
<td>No Data Available</td>
</tr>
<tr>
<td>Melting Point/Freezing Point</td>
<td>No Data Available</td>
</tr>
<tr>
<td>Initial Boiling Point and Range</td>
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</tr>
<tr>
<td>Flash Point</td>
<td>No Data Available</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No Data Available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
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</tr>
<tr>
<td>Upper Flammability/Explosion Limit</td>
<td>No Data Available</td>
</tr>
<tr>
<td>Lower Flammability/Explosion Limit</td>
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</tr>
<tr>
<td>Vapor Pressure</td>
<td>No Data Available</td>
</tr>
<tr>
<td>Vapor Density</td>
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<tr>
<td>Relative Density</td>
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</tr>
<tr>
<td>Water Solubility</td>
<td>Poor water solubility</td>
</tr>
<tr>
<td>Solubility in Other Solvents</td>
<td>Soluble in ethanol, methanol, DMF or DMSO</td>
</tr>
<tr>
<td>Partition Coefficient: n-octanol/water</td>
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</tr>
<tr>
<td>Auto-Ignition Temperature</td>
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</tr>
<tr>
<td>Decomposition Temperature</td>
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</tr>
<tr>
<td>Viscosity</td>
<td>No Data Available</td>
</tr>
<tr>
<td>Explosive Properties</td>
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<tr>
<td>Oxidizing Properties</td>
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<tr>
<td>Optical Rotation</td>
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<tr>
<td>Absorbance (290nm, 5% in H₂O)</td>
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</tr>
<tr>
<td>Water Content (Loss on Drying)</td>
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</tr>
</tbody>
</table>

9.2 Other safety information
No Data Available

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity
No Data Available

10.2 Chemical stability
Stable under recommended storage conditions

10.3 Possibility of hazardous reactions
No Data Available
10.4 Conditions to avoid
No Data Available

10.5 Incompatible materials
Strong oxidizing agents

10.6 Hazardous decomposition products
Formed under fire conditions: carbon and nitrogen oxides

Other decomposition products:
No Data Available

In the event of a fire: See Section 5

SECTION 11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute Toxicity
Oral LD$_{50}$ : Mouse: 21 mg/kg
Intraperitoneal LD$_{50}$ : Mouse: 2450 μg/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
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 the International Agency for Research on Cancer Monograph.
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 the National Toxicology Program.
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 the Occupational Health and Safety Association.

Reproductive Toxicity
No Data Available

Specific Target Organ Toxicity: Single Exposure
No Data Available

Specific Target Organ Toxicity: Repeated Exposure
Gastrointestinal - Changes in structure or function of endocrine pancreas

Aspiration Hazard
No Data Available

Additional Information
RTECS # CB9732000
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.
SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity
No Data Available

12.2 Persistence and degradability
No Data Available

12.3 Bioaccumulative potential
No Data Available

12.4 Mobility in soil
No Data Available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.

12.6 Other adverse effects
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.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods
Product
Offer surplus and non-recyclable products to a licensed disposal company. 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. Avoid disposal of material in drains or sewers.

EU Waste material must be disposed of in accordance with the Directive on waste 2008/98/EC as well as other national and local regulations.

Contaminated Packaging
Dispose of as unused product.

SECTION 14: TRANSPORTATION INFORMATION

14.1 UN number
DOT (US): 3462          ADR/RID: 3462          IMDG: 3462          IATA: 3462

14.2 UN proper shipping name
DOT (US): Toxins, extracted from living sources, solid, n.o.s. (Concanamycin A)
ADR/RID: Toxins, extracted from living sources, solid, n.o.s. (Concanamycin A)
IMDG: TOXINS, EXTRACTED FROM LIVING SOURCES, SOLID, N.O.S. (Concanamycin A)
IATA: Toxins, extracted from living sources, solid, n.o.s. (Concanamycin A)

14.3 Transport hazard class(es)

14.4 Packaging group
DOT(US): II          ADR/RID: II          IMDG: II          IATA: II

14.5 Environmental hazards
DOT(US): No          ADR/RID: No          IMDG Marine pollutant: No          IATA: No
**14.6 Special precautions for user**
No Data Available

**SECTION 15: REGULATORY INFORMATION**

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006 and 29 CFR 1910.1200

**Authorizations and/or restrictions on use**
No Data Available

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

**US SARA 313 Components**
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 313.

**US SARA 311/312 Hazards**
No chemicals in this material are subject to the reporting requirements of 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**
This product does not contain any chemicals known to the State of California to cause birth defects, cancer, or any other reproductive harm.

**15.2 Chemical safety assessment**
For this product a chemical safety assessment was not carried out.

**SECTION 16: OTHER INFORMATION**

**Full Text of H-Statements referred to under sections 2 and 3**

<table>
<thead>
<tr>
<th>H-Statement</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>H300</td>
<td>Fatal if swallowed</td>
</tr>
<tr>
<td>H310</td>
<td>Fatal in contact with skin</td>
</tr>
<tr>
<td>H319</td>
<td>Causes serious eye irritation</td>
</tr>
<tr>
<td>H330</td>
<td>Fatal if inhaled</td>
</tr>
</tbody>
</table>

**HMIS Rating**
- Health Hazard: 4
- Chronic Health Hazard: 0
- Flammability: 0
- Physical Hazard: 0

**NFPA Rating**
- Health Hazard: 4
- Fire Hazard: 0
- Reactivity Hazard: 0

**Further Information**
Revision Date: 2018-03-20
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.