



MATERIAL SAFETY DATA SHEET

Version 2.0

Revision Date 28/09/2011

1. SUBSTANCE IDENTITY AND COMPANY CONTACT INFORMATION

| | |
|----------------------------------|---|
| Product Name | Natamycin |
| Product Number | N001 |
| Supplier | TOKU-E COMPANY 715 W. Orchard Dr., Suite 3 Bellingham, WA 98225 |
| EMERGENCY PHONE (US only) | 1-888-71-TOKU-E(86583) |
| Email | info@TOKU-E.com |

2. CHEMICAL COMPOSITION AND DATA ON COMPONENTS

| | |
|-------------------------|-----------------------|
| CAS NO. | 7681-93-8 |
| Formula | $C_{33}H_{47}NO_{13}$ |
| Molecular Weight | 665.73 |

3. HAZARD IDENTIFICATION

| | |
|----------------------------|--|
| Target Organs | No data available |
| OSHA Hazards | No known OSHA hazards |
| GHS Classification | No data available |
| GHS Label elements | No data available |
| HMIS Classification | Health hazard: 1 Flammability: 0 Physical hazards: 0 |
| NFPA Rating | Health hazard: 0 Fire: 0 Reactivity Hazard: 0 |

In case of accident or if you feel unwell, seek medical advice immediately (show label when possible). Wear suitable

protective clothing, gloves and eye/ face protection.

4. FIRST-AID MEASURES

General advice

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

If inhaled

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

In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Flush eyes with water as a precaution.

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

Water spray. Carbon dioxide, dry chemical powder or appropriate foam.

Special protective equipment for fire-fighters

Wear self-contained breathing apparatus and protective clothing to prevent contact with eyes and skin.

Unusual fire and explosion hazards

Emits toxic fumes under fire conditions.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Exercise appropriate precautions to minimize direct contact with skin or eyes and prevent inhalation of dust. Wear self-contained breathing apparatus, rubber boots and heavy rubber gloves.

Methods for cleaning up

Sweep up; avoid raising dust, place in a bag and hold for waste disposal. Ventilate area and wash spill site after material pickup is complete.

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. Normal measures for preventive fire protection.

Storage

Keep container tightly closed in a dry and well-ventilated place.

Recommended storage temperature: 2 - 8 °C

Light sensitive.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

Personal protective equipment**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).

Hand 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.

Eye protection

Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and 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.

Hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|------------------|-----------------|
| Appearance | powder |
| pH | N/A |
| Melting point | 280 °C (536 °F) |
| Boiling point | N/A |
| Flash point | N/A |
| Water solubility | soluble |

10. STABILITY AND REACTIVITY

Storage stability

Stable under recommended storage conditions.

Materials to avoid

Avoid strong oxidizing agents.

Conditions to avoid

Light.

Hazardous decomposition products

Hazardous combustion or decomposition products thermal decomposition may produce carbon monoxide, carbon dioxide, nitrogen oxides and sulfur oxides.

Hazardous polymerization products

Hazardous polymerization will not occur.

11. TOXICOLOGICAL INFORMATION

Potential Health Effects

Inhalation May be harmful if inhaled. Material may be irritating to mucous membranes and upper respiratory tract.

Skin May cause skin irritation. May be harmful if absorbed through the skin.

Eyes May cause eye irritation.

Ingestion May be harmful if swallowed.

Signs and Symptoms of Exposure

Amino glycosides are associated with significant nephrotoxicity and/ or ototoxicity.

Toxicity data:

LD₅₀ LD50 Oral - rat - 2,730 mg/kg

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.

Chronic exposure

Prolonged or repeated exposure may cause allergic reactions in certain sensitive individuals.

Laboratory experiments have shown teratogenic effects.

Only selected registry of toxic effects of chemical substances (RTECS) data is presented here. See actual entry in trees for complete information.

12. ECOLOGICAL INFORMATION

Toxicity

no data available

Persistence and degradability

no data available

Bioaccumulative potential

no data available

Mobility in soil

no data available

PBT and vPvB assessment

no data available

Other adverse effects

no data available

13. DISPOSAL CONSIDERATIONS

Product

Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

| | |
|-----------------|---------------------|
| DOT (US) | Not dangerous goods |
| IMDG | Not dangerous goods |
| IATA | Not dangerous goods |

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 Hazards

Fire Hazard, Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

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

16. OTHER INFORMATION**Further information**

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. Toku-e Co., 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.