

# Nigericin•Na

sc-201518



The Power to Question

Material Safety Data Sheet

Hazard Alert Code Key: **EXTREME** **HIGH** **MODERATE** **LOW**

## Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

### PRODUCT NAME

Nigericin•Na

### STATEMENT OF HAZARDOUS NATURE

CONSIDERED A HAZARDOUS SUBSTANCE ACCORDING TO OSHA 29 CFR 1910.1200.

### NFPA



### SUPPLIER

Santa Cruz Biotechnology, Inc.  
2145 Delaware Avenue  
Santa Cruz, California 95060  
800.457.3801 or 831.457.3800

### EMERGENCY:

ChemWatch  
Within the US & Canada: 877-715-9305  
Outside the US & Canada: +800 2436 2255  
(1-800-CHEMCALL) or call +613 9573 3112

### SYNONYMS

C40H67O11•Na, "(2R)-2-[(2R, 3S, 6R)-6-[[[(2S, 4R, 5R, 7R, 9R, 10R)-2-[(2R, 5S)-5-[(2R, ", "3S, 5R)-5-[(2S, 3S, 5R, 6R)-6-hydroxy-6-(hydroxymethyl)-3, 5-dimethyl-, 2-tetrahydropyranyl]-3-methyl-2-tetrahydrofuran]-5-methyl-2-, "tetrahydrofuran]-9-methoxy-2, 4, 10-trimethyl-1, 6-dioxaspiro[4.5]decan-", "7-yl)methyl]-3-methyl-2-tetrahydropyranyl]propanoic acid", "antibiotic K-178", "antibiotic X-464", "Azalomycin M", "Helixin C", "Polyetherin A"

## Section 2 - HAZARDS IDENTIFICATION

### CHEMWATCH HAZARD RATINGS

	Min	Max
Flammability:	1	
Toxicity:	2	
Body Contact:	2	
Reactivity:	1	
Chronic:	0	

Min/Nil=0  
Low=1  
Moderate=2  
High=3  
Extreme=4



### CANADIAN WHMIS SYMBOLS



## EMERGENCY OVERVIEW

### RISK

Harmful by inhalation and if swallowed.

### POTENTIAL HEALTH EFFECTS

#### ACUTE HEALTH EFFECTS

##### SWALLOWED

■ Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual.

■ Ionophores are common anticoccidial and antibacterial feed additives.

They facilitate the movement of alkali metallic ions, such as Na<sup>+</sup>, across cell membranes.

##### EYE

■ Although the material is not thought to be an irritant, direct contact with the eye may cause transient discomfort characterized by tearing or conjunctival redness (as with windburn).

Slight abrasive damage may also result.

##### SKIN

■ Skin contact with the material may damage the health of the individual; systemic effects may result following absorption.

■ Open cuts, abraded or irritated skin should not be exposed to this material.

■ Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects.

Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.

■ The material may cause moderate inflammation of the skin either following direct contact or after a delay of some time.

Repeated exposure can cause contact dermatitis which is characterized by redness, swelling and blistering.

##### INHALED

■ Inhalation of dusts, generated by the material, during the course of normal handling, may be harmful.

■ The material is not thought to produce respiratory irritation (as classified using animal models).

Nevertheless inhalation of dusts, or fume, especially for prolonged periods, may produce respiratory discomfort and occasionally, distress.

■ Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled.

##### CHRONIC HEALTH EFFECTS

■ Long-term exposure to the product is not thought to produce chronic effects adverse to the health (as classified using animal models); nevertheless exposure by all routes should be minimized as a matter of course.

Long term exposure to high dust concentrations may cause changes in lung function i.e. pneumoconiosis; caused by particles less than 0.5 micron penetrating and remaining in the lung.

In a three-month study rats fed 300 ppm of the congener monensin showed reduced weight gains, skeletal and cardiac lesions, and death; dogs fed 15 or 50 ppm monensin showed reduced weight gain, ataxia, weakness, laboured respiration, weight loss, increased serum muscle enzymes, skeletal muscle degeneration and necrosis, heart lesions and death; mice had reduced weight gains at all levels tested and increased serum creatinine-phosphokinase (CPK) and heart lesions at 300 ppm monensin. Dogs fed 5 or 7.5 mg/kg monensin for one year had transient signs of anorexia, weakness, hypoactivity and increased alanine-transaminase and CPK levels. Up to 80 ppm monensin had no effects on the reproductive performance or teratogenicity in four generations of rats, and no effects on chronic lesions over two years. Functional disturbances appear to be explained by structural changes in muscle due to altered transport of cations.

## Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
nigericin sodium	28380-24-7	>98

## Section 4 - FIRST AID MEASURES

##### SWALLOWED

· IF SWALLOWED, REFER FOR MEDICAL ATTENTION, WHERE POSSIBLE, WITHOUT DELAY. · Where Medical attention is not immediately available or where the patient is more than 15 minutes from a hospital or unless instructed otherwise:

##### EYE

■ If this product comes in contact with the eyes: · Wash out immediately with fresh running water. · Ensure complete irrigation of the eye

by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.

#### **SKIN**

■ If skin contact occurs: · Immediately remove all contaminated clothing, including footwear · Flush skin and hair with running water (and soap if available).

#### **INHALED**

· If fumes or combustion products are inhaled remove from contaminated area. · Lay patient down. Keep warm and rested.

#### **NOTES TO PHYSICIAN**

■ for poisons (where specific treatment regime is absent):

-----BASIC TREATMENT

-----  
· Establish a patent airway with suction where necessary.  
· Watch for signs of respiratory insufficiency and assist ventilation as necessary.  
Treat symptomatically.

### **Section 5 - FIRE FIGHTING MEASURES**

Vapour Pressure (mmHG):	Negligible
Upper Explosive Limit (%):	Not available.
Specific Gravity (water=1):	Not available
Lower Explosive Limit (%):	Not available

#### **EXTINGUISHING MEDIA**

· Foam.  
· Dry chemical powder.

#### **FIRE FIGHTING**

· Alert Emergency Responders and tell them location and nature of hazard.  
· Wear full body protective clothing with breathing apparatus.

#### **GENERAL FIRE HAZARDS/HAZARDOUS COMBUSTIBLE PRODUCTS**

· Combustible solid which burns but propagates flame with difficulty.  
· Avoid generating dust, particularly clouds of dust in a confined or unventilated space as dusts may form an explosive mixture with air, and any source of ignition, i.e. flame or spark, will cause fire or explosion. Dust clouds generated by the fine grinding of the solid are a particular hazard; accumulations of fine dust may burn rapidly and fiercely if ignited.  
Combustion products include: carbon monoxide (CO), carbon dioxide (CO<sub>2</sub>), other pyrolysis products typical of burning organic material. May emit poisonous fumes.

#### **FIRE INCOMPATIBILITY**

■ Avoid contamination with oxidizing agents i.e. nitrates, oxidizing acids, chlorine bleaches, pool chlorine etc. as ignition may result.

#### **PERSONAL PROTECTION**

Glasses:  
Gloves:  
Respirator:  
Particulate

### **Section 6 - ACCIDENTAL RELEASE MEASURES**

#### **MINOR SPILLS**

· Clean up waste regularly and abnormal spills immediately.  
· Avoid breathing dust and contact with skin and eyes.  
· Wear protective clothing, gloves, safety glasses and dust respirator.  
· Use dry clean up procedures and avoid generating dust.  
· Vacuum up or sweep up. NOTE: Vacuum cleaner must be fitted with an exhaust micro filter (HEPA type) (consider explosion-proof machines designed to be grounded during storage and use).  
· Dampen with water to prevent dusting before sweeping.  
· Place in suitable containers for disposal.

#### **MAJOR SPILLS**

· Clear area of personnel and move upwind.  
· Alert Emergency Responders and tell them location and nature of hazard.

### **Section 7 - HANDLING AND STORAGE**

#### **PROCEDURE FOR HANDLING**

■ NOTE : Do NOT pipette by mouth. Only trained personnel should be allowed to handle or use this product.  
· Avoid all personal contact, including inhalation.

- Wear protective clothing when risk of exposure occurs.
- Empty containers may contain residual dust which has the potential to accumulate following settling. Such dusts may explode in the presence of an appropriate ignition source.
- Do NOT cut, drill, grind or weld such containers.
- In addition ensure such activity is not performed near full, partially empty or empty containers without appropriate workplace safety authorisation or permit.

### RECOMMENDED STORAGE METHODS

- Glass container.
- Lined metal can, Lined metal pail/drum
- Plastic pail.

For low viscosity materials

- Drums and jerricans must be of the non-removable head type.
- Where a can is to be used as an inner package, the can must have a screwed enclosure.

### STORAGE REQUIREMENTS

- Store in original containers.
- Keep containers securely sealed.

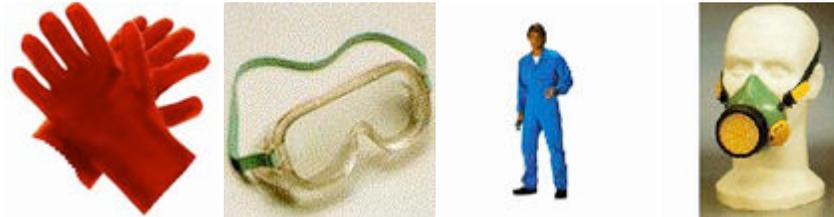
## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

### EXPOSURE CONTROLS

The following materials had no OELs on our records

- nigericin sodium: CAS:28380-24-7

### PERSONAL PROTECTION



### RESPIRATOR

- particulate.

### EYE

■ For laboratory, larger scale or bulk handling or where regular exposure in an occupational setting occurs:

- Chemical goggles
- Face shield. Full face shield may be required for supplementary but never for primary protection of eyes
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lens or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59].

### HANDS/FEET

■ Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include: such as:

- frequency and duration of contact,
- chemical resistance of glove material,
- glove thickness and
- dexterity

Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739).

- When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374) is recommended.
- When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374) is recommended.
- Contaminated gloves should be replaced.

Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.

- Rubber gloves (nitrile or low-protein, powder-free latex). Employees allergic to latex gloves should use nitrile gloves in preference.
- Double gloving should be considered.
- PVC gloves.
- Protective shoe covers.
- Head covering.

### OTHER

- For quantities up to 500 grams a laboratory coat may be suitable.
- For quantities up to 1 kilogram a disposable laboratory coat or coverall of low permeability is recommended. Coveralls should be buttoned at collar and cuffs.
- For quantities over 1 kilogram and manufacturing operations, wear disposable coverall of low permeability and disposable shoe covers.
- For manufacturing operations, air-supplied full body suits may be required for the provision of advanced respiratory protection.
- Eye wash unit.
- Ensure there is ready access to an emergency shower.
- For Emergencies: Vinyl suit.
- Handle extremely poisonous natural toxins in closed systems such as glove bags or other enclosures, to avoid accidental contact. Workers should wear complete disposable clothing including shoe covers, gloves and mask with an independent air supply.

### ENGINEERING CONTROLS

■ Air should be supplied by an independent system.

Enclosed local exhaust ventilation is required at points of dust, fume or vapor generation.

HEPA terminated local exhaust ventilation should be considered at point of generation of dust, fumes or vapors.

## Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

### PHYSICAL PROPERTIES

Solid.

Does not mix with water.

State	Divided solid	Molecular Weight	746.9
Melting Range (°F)	361.5- 369	Viscosity	Not Applicable
Boiling Range (°F)	Not available	Solubility in water (g/L)	Partly miscible
Flash Point (°F)	Not available	pH (1% solution)	Not applicable
Decomposition Temp (°F)	Not available.	pH (as supplied)	Not applicable
Autoignition Temp (°F)	Not available	Vapour Pressure (mmHG)	Negligible
Upper Explosive Limit (%)	Not available.	Specific Gravity (water=1)	Not available
Lower Explosive Limit (%)	Not available	Relative Vapor Density (air=1)	>1
Volatile Component (%vol)	Negligible	Evaporation Rate	Not applicable

### APPEARANCE

Colourless needles; do not mix well with water. Soluble in alcohols, acetone, ethyl acetate, chloroform, benzene, ether. Solutions will deteriorate slowly unless kept below room temperature.

## Section 10 - CHEMICAL STABILITY

### CONDITIONS CONTRIBUTING TO INSTABILITY

- Presence of incompatible materials.
- Product is considered stable.

### STORAGE INCOMPATIBILITY

■ Avoid reaction with oxidizing agents.

Sensitive to high concentrations of strong acids, bases.

For incompatible materials - refer to Section 7 - Handling and Storage.

## Section 11 - TOXICOLOGICAL INFORMATION

nigericin sodium

### TOXICITY AND IRRITATION

NIGERICIN SODIUM:

■ unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

TOXICITY	IRRITATION
Oral (mouse) LD50: 190 mg/kg	Nil Reported
Intraperitoneal (mouse) LD50: 2.5 mg/kg	

■ The material may cause severe skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin. Repeated exposures may produce severe ulceration.

## Section 12 - ECOLOGICAL INFORMATION

This material and its container must be disposed of as hazardous waste.

### Ecotoxicity

Ingredient	Persistence: Water/Soil	Persistence: Air	Bioaccumulation	Mobility
nigericin sodium	HIGH	No Data Available	LOW	HIGH

## Section 13 - DISPOSAL CONSIDERATIONS

### Disposal Instructions

All waste must be handled in accordance with local, state and federal regulations.

‡ Puncture containers to prevent re-use and bury at an authorized landfill.

Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.

A Hierarchy of Controls seems to be common - the user should investigate:

- Reduction
- Reuse
- Recycling
- Disposal (if all else fails)

This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate.

DO NOT allow wash water from cleaning equipment to enter drains. Collect all wash water for treatment before disposal.

· Recycle wherever possible. Special hazard may exist - specialist advice may be required.

## Section 14 - TRANSPORTATION INFORMATION

DOT:

Symbols: None Hazard class or Division: 6.1

Identification Numbers: UN3462 PG: III

Label Codes: 6.1 Special provisions: 141, IB8,

IP3, T1

TP33

Packaging: Exceptions: 153 Packaging: Non- bulk: 213

Packaging: Exceptions: 153 Quantity limitations: 100 kg

Passenger aircraft/rail:

Quantity Limitations: Cargo 200 kg Vessel stowage: Location: A

aircraft only:

Vessel stowage: Other: None

Hazardous materials descriptions and proper shipping names:

Toxins, extracted from living sources, solid, n.o.s.

### Air Transport IATA:

ICAO/IATA Class: 6.1 ICAO/IATA Subrisk: None

UN/ID Number: 3462 Packing Group: III

Special provisions: A3

Cargo Only

Packing Instructions: 200 kg Maximum Qty/Pack: 677

Passenger and Cargo Passenger and Cargo

Packing Instructions: 100 kg Maximum Qty/Pack: 670

Passenger and Cargo Limited Quantity Passenger and Cargo Limited Quantity

Packing Instructions: 10 kg Maximum Qty/Pack: Y645

Shipping Name: TOXINS, EXTRACTED FROM LIVING SOURCES,

SOLID, N.O.S. \*(CONTAINS NIGERICIN SODIUM)

### Maritime Transport IMDG:

IMDG Class: 6.1 IMDG Subrisk: None

UN Number: 3462 Packing Group: III

EMS Number: F-A , S-A Special provisions: 210 223 274

Limited Quantities: 5 kg

Shipping Name: TOXINS, EXTRACTED FROM LIVING SOURCES, SOLID, N.O.S.(contains nigericin sodium)

## Section 15 - REGULATORY INFORMATION

No data for nigericin sodium (CAS: , 28380-24-7)

## Section 16 - OTHER INFORMATION

*Reasonable care has been taken in the preparation of this information, but the author makes no warranty of merchantability or any other warranty, expressed or implied, with respect to this information. The author makes no representations and assumes no liability for any direct, incidental or consequential damages resulting from its use. For additional technical information please call our toxicology department on +800 CHEMCALL.*

■ Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

A list of reference resources used to assist the committee may be found at:  
[www.chemwatch.net/references](http://www.chemwatch.net/references).

■ The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

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