1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier
Product Name: Fucoidan
Product Code: SC-255187

Recommended use of the chemical and restrictions on use
For research use only. Not intended for diagnostic or therapeutic use.

Details of the supplier of the safety data sheet
Santa Cruz Biotechnology, Inc.
10410 Finnell Street
Dallas, TX 75220
831.457.3800
800.457.3801
scbt@scbt.com

2. HAZARDS IDENTIFICATION

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.122).

Classification
Not a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Label elements
Signal word: Not classified
Hazard statements: Not classified
Symbols/Pictograms: Not classified

Precautionary Statements - Prevention: Wash hands thoroughly after handling
Precautionary Statements - Response: IF exposed or concerned: Get medical advice/attention

Hazard statements
Health hazards: Not applicable
Flammability: 0
Physical and chemical stability: 0

Other Information
NFPA Health hazards: 3
Flammability: 0
Stability: 0
Physical and chemical stability: -

HMIS
Health hazards: 3
Flammability: 0
Physical hazards: 0
Personal protection: -

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No</th>
<th>Weight %</th>
<th>Oral LD50</th>
<th>Dermal LD50</th>
<th>Inhalation LC50</th>
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<td>9072-19-9</td>
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<tr>
<td>Molecular Weight</td>
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<td>Formula</td>
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</tr>
</tbody>
</table>
4. FIRST AID MEASURES

First Aid Measures

General advice
Immediate medical attention is required.

Eye contact
Immediate medical attention is required. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area.

Skin Contact
Immediate medical attention is required. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.

Inhalation
Remove to fresh air. Call a physician or poison control center immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Ingestion
Immediate medical attention is required. Do NOT induce vomiting. Drink plenty of water. Never give anything by mouth to an unconscious person. Remove from exposure, lie down. Clean mouth with water and drink afterwards plenty of water. Call a physician or poison control center immediately.

Self-protection of the first aider
Use personal protective equipment as required. Avoid contact with skin, eyes or clothing.

Most important symptoms and effects, both acute and delayed
Symptoms
No information available.

Indication of any immediate medical attention and special treatment needed
Note to physicians
Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure. Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media
Suitable Extinguishing Media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media
None.

Specific hazards arising from the chemical
Specific hazards arising from the chemical
The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating and toxic gases and vapors. In the event of fire and/or explosion do not breathe fumes.

Hazardous combustion products
Carbon oxides.

Explosion data
Sensitivity to Mechanical Impact
No information available.

Sensitivity to Static Discharge
No information available.

Protective equipment and precautions for firefighters
Protective equipment and precautions for firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures
Personal precautions
Evacuate personnel to safe areas. Use personal protective equipment as required. Avoid contact with skin, eyes or clothing. Keep people away from and upwind of spill/leak.

Environmental precautions
Do not allow into any sewer, on the ground or into any body of water. Should not be released into the environment. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up
Prevent further leakage or spillage if safe to do so.
Take up mechanically, placing in appropriate containers for disposal. Clean contaminated surface thoroughly. Use personal protective equipment as required. Cover powder spill with plastic sheet or tarp to minimize spreading and keep powder dry. Avoid creating dust. Dam up. After cleaning, flush away traces with water.

7. HANDLING AND STORAGE

Precautions for safe handling
Use personal protective equipment as required. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation, especially in confined areas. In case of insufficient ventilation, wear suitable respiratory equipment. Use only with adequate ventilation and in closed systems.

Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place. Keep out of the reach of children. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep in properly labeled containers. May form explosive peroxides. Store at room temperature.

Incompatible materials
Incompatible with strong acids and bases. Incompatible with oxidizing agents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters
This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Appropriate engineering controls
Showers
Eyewash stations
Ventilation systems

Individual protection measures, such as personal protective equipment
Eye/face protection
Tight sealing safety goggles. Face protection shield.

Skin and Body Protection
Wear protective gloves and protective clothing.

Respiratory protection
If exposure limits are exceeded or irritation is experienced. NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

General Hygiene Considerations
When using do not eat, drink or smoke. Wash contaminated clothing before reuse. Keep away from food, drink and animal feeding stuffs. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Avoid contact with skin, eyes or clothing. Take off all contaminated clothing and wash it before reuse. Wear suitable gloves and eye/face protection.

9. PHYSICAL AND CHEMICAL PROPERTIES
Physical State
- Solid

Appearance
- Powder

Odor
- No information available

### Property
**Values**
- pH
- No information available
- Melting point/freezing point
- No information available
- Boiling point
- No information available
- Flash point
- No information available
- Density
- No information available
- Evaporation rate
- No information available
- Upper flammability limits
- No information available
- Lower flammability limit
- No information available
- Vapor pressure
- No information available
- Vapor density
- No information available
- Specific gravity
- No information available
- Water solubility
- No information available
- Solubility in other solvents
- No information available
- Partition coefficient
- No information available
- Autoignition temperature
- No information available
- Decomposition temperature
- No information available
- Kinematic viscosity
- No information available
- Explosive properties
- No information available
- Oxidizing properties
- No information available

### 10. STABILITY AND REACTIVITY

Reactivity
- Not applicable

Chemical stability
- May form explosive peroxides.

Possibility of Hazardous Reactions
- None under normal processing.

Hazardous polymerization
- No information available.

Conditions to avoid
- Exposure to air or moisture over prolonged periods.

Incompatible materials
- Incompatible with strong acids and bases. Incompatible with oxidizing agents.

Hazardous Decomposition Products
- Thermal decomposition can lead to release of irritating and toxic gases and vapors. Carbon oxides.

### 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure
- **Inhalation**
  - No data available.
- **Eye contact**
  - No data available.
- **Skin Contact**
  - No data available.
- **Ingestion**
  - No data available.

Information on toxicological effects
- Symptoms
  - No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure
- **Chronic Toxicity**
  - Chronic exposure to corrosive fumes/gases may cause erosion of the teeth followed by jaw necrosis. Bronchial irritation with chronic cough and frequent attacks of pneumonia are common. Gastrointestinal disturbances may also be seen. Avoid repeated exposure. Possible risk of irreversible effects.

Numerical measures of toxicity
- **Unknown acute toxicity**
  - No information available
12. ECOLOGICAL INFORMATION

Ecotoxicity
May cause long lasting harmful effects to aquatic life

100% of the mixture consists of components(s) of unknown hazards to the aquatic environment.

Persistence and degradability
No information available.

Bioaccumulation
No information available.

Mobility
No information available.

13. DISPOSAL CONSIDERATIONS

Disposal of wastes
Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated packaging
Do not reuse container.

Other Information
Waste codes should be assigned by the user based on the application for which the product was used.

14. TRANSPORT INFORMATION

DOT
Not regulated

IMDG
Not regulated

IATA
Not regulated

15. REGULATORY INFORMATION

International Inventories
All of the components in the product are on the following Inventory lists
No information available

$X$ - Listed
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances

US Federal Regulations

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories
Acute health hazard Yes
Chronic Health Hazard Yes
Fire hazard  No
Sudden release of pressure hazard  No
Reactive hazard  No

CWA (Clean Water Act)
This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

US State Regulations

California Proposition 65
This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations
This product does not contain any substances regulated by state right-to-know regulations

16. OTHER INFORMATION

Revision note  No information available

Disclaimer
The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet