

SAFETY DATA SHEET

Cat# 2094-50, Nodularin

SDS DATE: Aug 3, 2012

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Nodularin
PRODUCT CODES: Cat# 2094-50
MANUFACTURER: BioVision, Inc.
ADDRESS: 155 S. Milpitas Boulevard, Milpitas, CA 95035
EMERGENCY PHONE: 858-373-8066
CHEMTREC PHONE:
OTHER CALLS: 408-493-1800
FAX PHONE: 408-493-1801

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

Component	Description	Volume	Safety Information
Nodularin	Solution (in Ethanol)	50 µg	See below

SECTION 3: HAZARDS IDENTIFICATION

Product Name/Chemical Name	CAS Number	EC-No.	Molecular Weight	Chemical Formula
Nodularin	118399-22-7	--	824.96	C ₄₁ H ₆₀ N ₈ O ₁₀
Ethanol	64-17-5	200-578-6	46.07	C ₂ H ₆ O

Nodularin:

Emergency Overview

OSHA Hazards: Highly toxic by inhalation, Highly toxic by ingestion, Highly toxic by skin absorption, Skin sensitizer, Irritant

GHS Classification: Acute toxicity, Oral (Category 2)
Acute toxicity, Inhalation (Category 1)
Acute toxicity, Dermal (Category 2)
Skin irritation (Category 2)
Eye irritation (Category 2A)
Skin sensitization (Category 1)
Specific target organ toxicity – single exposure (Category 3)

GHS Label elements, including precautionary statements

Pictogram:



Signal word:

Danger

Hazard statement(s):

H300+H310+H330 Fatal if swallowed, in contact with skin, or if inhaled.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.

Precautionary statement(s):

P260 Do not breathe dust/fume/gas/mist/vapors/spray.
P264 Wash hands thoroughly after handling.
P280 Wear protective gloves/protective clothing.
P284 Wear respiratory protection.
P301+P310 IF SWALLOWED: Immediately call POISON CENTER or doctor/physician.
P302+P350 IF ON SKIN: Gently wash with plenty of soap and water.
P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

HMIS Classification

Health hazard: 4

Flammability: 0

Physical hazards: 0

NFPA Rating

Health Hazard: 4

Fire: 0

Reactivity Hazard: 0

Potential Health Effects

Inhalation: Fatal if inhaled. Causes respiratory tract irritation.

Skin: May be fatal if absorbed through skin. Causes skin irritation.

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Eyes: Causes eye irritation.

Ingestion: May be fatal if swallowed.

Ethanol:

Emergency Overview

OSHA Hazards: Highly flammable liquid, Target organ effect, Irritant, Carcinogen

Target Organs: Nerves, Liver, Heart

GHS Classification: Flammable liquids (Category 2)
Skin irritation (Category 2)
Eye irritation (Category 2B)
Specific target organ toxicity – single exposure (Category 3)

GHS Label elements, including precautionary statements

Pictogram:



Signal word: Danger

Hazard statement(s): H225 Highly flammable liquid and vapor
H315+H320 Causes skin and eye irritation.
H335 May cause respiratory irritation.

Precautionary statement(s): P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P261 Avoid breathing dust/fume/gas/mist/vapors/spray.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

HMIS Classification

Health hazard: 2

Chronic health hazard: *

Flammability: 3

Physical hazards: 0

NFPA Rating

Health Hazard: 2

Fire: 3

Reactivity Hazard: 0

Potential Health Effects

Inhalation: May be harmful if inhaled. Causes respiratory tract irritation.

Skin: May be harmful if absorbed through skin. Causes skin irritation.

Eyes: Causes eye irritation.

Ingestion: May be harmful if swallowed.

SECTION 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: Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

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

Ethanol:

Condition of flammability: Flammable in the presence of a source of ignition when the temperature is above the flash point. Keep away from heat/sparks/open flame/hot surface. No smoking.

Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for fire-fighters: Wear self-contained breathing apparatus for firefighting if necessary.

Hazardous combustion products: Hazardous combustion products formed under fire conditions— no data available.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions: Use personal protective equipment. Avoid breathing vapors, mist, or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

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

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

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SECTION 7: HANDLING AND STORAGE

Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapor or mist. Use explosion-proof equipment. Keep away from sources of ignition (no smoking). Take measures to prevent the buildup of electrostatic charge.

Conditions for safe storage

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

Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Recommended storage temperature: -20 °C

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Ethanol:

Components	CAS-No.	Value	Control parameters	Basis
Ethanol	64-17-5	TWA	1,000 ppm	USA. ACGIH Threshold Limit Values (TLV)
Remarks: Upper respiratory tract irritation. Confirmed animal carcinogen with unknown relevance to humans.				
		TWA	1,000 ppm 1,900 mg/m ³	USA. OSHA: TABLE Z-1 Limits for Air Contaminants – 1910.1000
		TWA	1,000 ppm 1,900 mg/m ³	USA. Occupational Exposure Limits (OSHA): Table Z-1 Limits for Air Contaminants
The value in mg/m ³ is approximate.				
		TWA	1,000 ppm 1,900 mg/m ³	USA. NIOSH recommended exposure limits

Nodularin:

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

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).

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 the workday.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Property	Nodularin	Ethanol
Appearance:	Solid	Clear liquid
pH:	No data available	No data available
Water Solubility:	No data available	Completely soluble
Specific Gravity (g/ml):	No data available	No data available
Boiling Point (°C):	No data available	78-80 °C (172.4-176 °F)
Melting Point (°C):	No data available	-144 °C (-227.2 °F)
Flash Point (°C):	No data available	14 °C (57.2 °F)
Ignition Temperature (°C):	No data available	363 °C (685°F)
Density	No data available	0.79 g/cm ³

SECTION 10: STABILITY AND REACTIVITY

Property	Nodularin	Ethanol
Chemical stability	Stable under recommended storage conditions	
Conditions to avoid:	No data available	Heat, flames, sparks, direct sunlight
Materials to avoid:	Strong oxidizing agents	Alkali metals, ammonia, oxidizing agents, peroxides
Hazardous decomposition products:	Carbon oxides, nitrogen oxides	Carbon oxides

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SECTION 11: TOXICOLOGICAL INFORMATION

Nodularin:

Acute toxicity: LD50 Intraperitoneal – mouse – 0.06 mg/kg

Skin corrosion/irritation: no data available

Serious eye damage/eye irritation: no data available

Respiratory or skin sensitization: May cause allergic skin reaction.

Germ cell mutagenicity: no data available

Carcinogenicity:

IARC: 3 – Group 3: Not classifiable as to its carcinogenicity to humans (Nodularin).

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.

Reproductive toxicity: no data available

Teratogenicity: no data available

Specific target organ toxicity – single exposure (GHS): Inhalation – may cause respiratory irritation.

Specific target organ toxicity – repeated exposure (GHS): no data available

Aspiration hazard: no data available

Potential Health Effects

Inhalation: Fatal if inhaled. Causes respiratory tract irritation.

Skin: May be fatal if absorbed through skin. Causes skin irritation.

Eyes: Causes eye irritation.

Ingestion: May be fatal if swallowed.

Signs and Symptoms of Exposure: Possible tumor promoter. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Synergistic effects: no data available

Additional information: RTECS: GU2294250

Ethanol:

Acute toxicity: LD50 Oral – rat – 7,060 mg/kg → Remarks: Lungs, thorax, or respiration : other changes

LC50 Inhalation – rat – 10 h – 20000 ppm

Skin corrosion/irritation: Skin – rabbit – irritating to skin – 24 h

Serious eye damage/eye irritation: Eyes – rabbit – mild eye irritation – 24 h (Draize test)

Respiratory or skin sensitization: no data available

Germ cell mutagenicity: no data available

Carcinogenicity: Carcinogenicity – mouse – oral → Tumorigenic: equivocal tumorigenic agent by RTECS criteria. Liver: tumors. Blood: Lymphomas including Hodgkin's disease.

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.

Reproductive toxicity: Reproductive toxicity – human – female – oral → Effects on newborn: apgar score (human only), other neonatal measures or effects, and drug dependence.

Teratogenicity: no data available

Specific target organ toxicity – single exposure (GHS): Inhalation – may cause respiratory irritation.

Specific target organ toxicity – repeated exposure (GHS): no data available

Aspiration hazard: no data available

Potential Health Effects

Inhalation: May be harmful if inhaled. Causes respiratory tract irritation.

Skin: May be harmful if absorbed through skin. Causes skin irritation.

Eyes: Causes eye irritation.

Ingestion: May be harmful if swallowed.

Signs and Symptoms of Exposure: Exposure may cause central nervous system depression, narcosis, and/or damage to the heart. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Synergistic effects: no data available

Additional information: RTECS: KQ6300000

SECTION 12: ECOLOGICAL INFORMATION

Nodularin & Ethanol:

Persistence and degradability: no data available

Toxicity: no data available

Bioaccumulative potential: no data available

Mobility in soil: no data available

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PBT and vPvB assessment: no data available

Other adverse effects: no data available

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SECTION 13: DISPOSAL CONSIDERATIONS

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

Contaminated packaging: Dispose of as unused product.

SECTION 14: TRANSPORT INFORMATION

Nodularin:

DOT (US): UN-number: 2811, Class: 6.1, Packing group: II; Proper shipping name: Toxic solids, organic, n.o.s. (Nodularin); Marine pollutant: No; Poison inhalation hazard: No

IMDG: UN-number: 2811, Class: 6.1, Packing group: I; EMS-No: F-A, S-A; Proper shipping name: TOXIC SOLID, ORGANIC, N.O.S. (NODULARIN); Marine pollutant: No

IATA: UN-number: 2811, Class: 6.1, Packing group: I; Proper shipping name: Toxic solid, organic, n.o.s. (Nodularin)

Ethanol:

DOT (US): UN-number: 1170, Class: 3, Packing group: II; Proper shipping name: Ethanol; Marine pollutant: No; Poison inhalation hazard: No

IMDG: UN-number: 1170, Class: 3, Packing group: II; EMS-No: F-E, S-D; Proper shipping name: ETHANOL; Marine pollutant: No

IATA: UN-number: 1170, Class: 3, Packing group: II; Proper shipping name: Ethanol

SECTION 15: REGULATORY INFORMATION

Nodularin:

OSHA Hazards: Highly toxic by inhalation, Highly toxic by ingestion, Highly toxic by skin absorption, Skin sensitizer, Irritant

SARA 302 Components: SARA 302: No chemical 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 II, Section 313.

SARA 311/312 Hazards: Acute Health Hazard

Massachusetts Right To Know Components: No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components: Nodularin, CAS-No. 118399-22-7

New Jersey Right To Know Components: Nodularin, CAS-No. 118399-22-7

California Prop. 65 Components: This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

Ethanol:

OSHA Hazards: Highly flammable liquid, Target organ effect, Irritant, Carcinogen

SARA 302 Components: SARA 302: No chemical 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 II, Section 313.

SARA 311/312 Hazards: Fire Hazard, Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components: Ethanol, CAS-No. 64-17-5, Revision Date: 2007-03-01

Pennsylvania Right To Know Components: Ethanol, CAS-No. 64-17-5, Revision Date: 2007-03-01

New Jersey Right To Know Components: Ethanol, CAS-No. 64-17-5, Revision Date: 2007-03-01

California Prop. 65 Components: This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

EU regulations

Component	Risk Phrases	Safety Phrases
Nodularin	R26/27/28, R36/37, R43	S22, S37/39, S45
Ethanol	R11, R20/21/22	S16, S36/37/39, S45

SECTION 16: OTHER INFORMATION

OTHER INFORMATION:

PREPARATION INFORMATION:

DISCLAIMER:

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. BioVision, Inc., 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.