

BIOREND

Version 1/USA

Section 1 - Chemical Product and Company Identification

Product Name: BIOREND®

Other Names : BIOREND® for Vineyards, BIOREND® for Vegetables.

CAS # 9012-76-4

EPA Reg. #: 91664-1

Product Use: Plant Defense Booster

Company Identification: Ag NuBio Inc.
11125 N. Ambassador Dr. STE. 120
Kansas City, MO 64153

Chemtrec call: 800-424-9300

Emergency call: 1-800-222-1222

Section 2 - Hazards identification

Classification of substance:



GHS07

Irritant if inhaled

Causes eye irritation

GHS labeling elements:

The substance is classified and labeled according to the Globally Harmonized System (GHS):

Hazard pictograms:



GHS07

Signal Word: Warning

Hazard-determined components of labeling: Chitosan

Hazard statements:

Irritant if inhaled

Cause eye irritation

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May be irritating in contact with skin

May be harmful if swallowed

Precautionary Statements:

Prevention: Avoid breathing mist spray.

Wash hands thoroughly after handling.

Response:

If Inhaled: Remove person to fresh air and keep at rest in a position comfortable for breathing. Wash contaminated clothing before reuse. Call a poison center or doctor/physician if you feel unwell.

If in Eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

If eye irritation persists: Get medical advice/attention.

If Swallowed: Call a poison center or doctor/physician if you feel unwell.

If on Skin: Remove all contaminated clothing. Rinse with water. If skin irritation occurs seek medical advice/attention.

Disposal: Dispose of contents and containers in accordance with local, regional, federal and international regulations.

Section 3 – Composition/information of ingredient

Chemical Name	Trade names and Synonyms	Percent	CAS No.
Chitosan	Chitosan (poly-D-glucosamine)	2.5%	9012-76-4
Other Ingredients	Non-Toxic and non-hazardous*	97.5%	

*Proprietary components

Section 4 – First Aid Measures

Symptoms	The material is not a significant health hazard when used according to our instructions. Small quantities entering the eyes, may be slightly irritating; small quantities entering the mouth or being swallowed are not considered to be significant. The material may dry the skin if chronic (daily exposures) are encountered.
Eyes:	May cause irritation do not rub eyes. Hold eye open and rinse slowly and gently with for 15 to 20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.
Skin:	Take off contaminated clothing. Rinse skin immediately with plenty of water for 15 to 20 minutes.

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Revision Date: 03/09/2017

Inhalation:	May cause irritation. Remove to fresh air. If a person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible.
<p>Note to Physicians</p> <p>Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact the Poison Control Center 800-222-1222.</p>	

Section 5 – Fire Fighting Measure

Extinguishing media: Use dry powder or sand, carbon dioxide, water fog, foam, halogenated agents, or appropriate surrounding fire and materials. Avoid use of water jets for extinguishing. Using dry chemical, foam or carbon dioxide extinguishing media.

Fire and Explosive Hazards: Non-flammable liquid.

Special fire fighting procedures: Fireman should wear complete fire protection clothes and shoes. Evacuate nonessential personnel from the area to prevent human exposure to fire.

Reference to other sections:

See Section 10 for decomposition products.

Section 6 – Accidental Release Measures

Personal precautions, protective equipment and emergency procedures: Wear approved protective clothing. Allow work against the wind and remove all people upwind.

Environmental precautions: Not known

Methods and material for containment and cleaning up:

In case small leak or spill: contain material using sand or other non-combustible or other absorbents to absorb spill, and dispose as waste.

In case large leak or spill: Wear appropriate protective clothing and wear nitrile (household) gloves. Shut off source of leak. Material can be disposed using city sanitary sewers.

Reference to other sections:

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

Section 7 – Handling and Storage

Handling

Precautions for safe handling: Do not inhale the steam prolonged or repeated. The use of BIOREND® in well-ventilated place is recommended. Do not inhale the steam prolonged or repeated. Users should wash hands before eating and drinking. Do not contaminate water, food, or feed by storage. Standard household

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ventilation should be adequate to control human exposures to this product.

Conditions for Safe Storage, including any incompatibilities

Storage: Do not contaminate water, food, or feed by storage. Keep container closed when not in use in a fresh and dry room. Avoid contact with water and direct exposure to the sunshine.

Requirements to be met by storerooms and receptacles: Do not store near food or feed. Protect from freezing.

Reference to other sections:

See Section 10 for incompatibilities

See Section 6 for accidental release measure

Section 8 – Contact Controls and Personal Protection

Max allowed concentration: No Data

Way of measurement: No Data

Engineering Control: Use adequate ventilation to keep risk of inhalation low.

Personal Protection

Respirators: Not normally needed for this product when diluted in water lightly acid for end-use application.

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles such as splash resistant safety goggles with a secondary protection face shield, although not normally needed

Body: Wear appropriate chemical resistant overalls and rubber boots and rubber gloves.

Hands: Wear appropriate gloves when needed, such as nitrile.

General protective and hygienic measures: Discard clothing other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Wash contaminated clothing before reuse. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. No smoking, eating or drinking during handling. Change to clean clothes after washing.

Section 9 – Physical and Chemical Properties

Information on basic physical and chemical properties

General Information:

Appearance and Physical State: Fluid, slight odor.

Color: Light yellow-brown.

pH Value: 4.5 – 6.5

Viscosity: Not available

Vapor Pressure (25 °C): 121 mmHg

Melting point: liquid at room temperature

Boiling Point: 105°C

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Specific Gravity: 1.02 g/cc @ 25°C

Comparative concentration (water: 1): Not available.

Quantity of heat in burning (KJ/mol): Not available.

Density (g/cm³): 1.02 at 25°C

Critical pressure (Mpa): Not available.

Critical temperature: Not available.

Flash point (C): None.

Flammable Limits: None.

Autoignition Temperature: None.

Burning temperature (C): Not available.

Explosion: None.

Partition Coefficient: Not available.

Solubility: Partially soluble in water to pH under 6.0 and insoluble in most of organic solvents.

Section 10 – Stability and Reactivity

Chemical Stability: This material is stable at the normal storage conditions. No react with air or water.

Incompatible to Avoid: Incompatible with highly oxidant materials.

Conditions to Avoid: If water has pH value upper 6.5 a buffer has to be added before adding the product to be sure that active ingredients do not precipitate.

Decomposition Products: None expected

Hazardous Polymerization: Will not occur

Reference to other sections:

See Section 5 for static discharge potential

Section 11 – Toxicological Information

Acute Toxicity:

LD/LC50 values that are relevant for classification:

Eyes: Moderate Irritant

Oral: LD₅₀ > 14 g/kg (similar to thesugar)

Inhalation: LC₅₀ > 20 mg/L

Dermal: LD₅₀ > 20 g/kg

Primary irritant effect:

On eyes: Minimally irritating to the eye

On the skin: Slight irritating to skin. Irritation can develop following repeated and/or prolonged contact with human skin.

Respiratory sensitization: Single exposure to mist is not likely to be hazardous. Vapors are unlikely due to physical properties.

Skin Sensitization: Product is not considered a contact sensitizer.

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Germ Cell Mutagenicity: The chromosome aberration test was negative.

Carcinogenicity: This product has negative Ames test results.

Reproductive Toxicity: Not available

STOT-Single Exposure: Not available

STOT-Repeated Exposure: Not available

Aspiration Hazard: Not available

Section 12 - Ecological Data

Eco-toxicity: Not an environmental toxin

Water Pollution Control Act: Not determined

Section 13 - Disposal Considerations

Waste Disposal: Do not contaminate water, food, or feed by disposal. Dispose of waste in city sewer system. Improper disposal of excess pesticide, spray mixture, or rinsate is violation of Federal Law.

Container Disposal: Do not distribute, make available, furnish or reuse empty containers. Triple rinse (or equivalent), then offer for recycling or reconditioning if container reuse is permitted. If container reuse is prohibited, puncture metal containers and dispose of in a sanitary landfill, or by other approved State and local authorities, If burned, stay out of smoke.

Section 14 - Transport Information

Proper Shipping Name: environmentally hazardous substance liquid, NOS (chitosan)

Hazard Class or Division: Class 9

Identification Number: UN 3082

Packaging Group: III

Section 15 - Regulatory Data

TSCA (Toxic Substance Control Act) Regulations, 40 CFR 710: This product is a pesticide and is exempt from TSCA regulation.

CERLA and SARA Regulations (40CFR 355, 370, and 372): This product does not contain any chemicals subject to the reporting requirements of SARA Section 313.

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NIOSH/RTECS: unknown (FM6125000)

German MAK: None

NIOSH REL: None

ACGIH TLV: None

OSHA PEL: None

Hazard Data	FIFRA Classification/Typical Hazard Labeling, as outlined in EPA Label Review Manual	OSHA HCS Requirement for Section 2 of SDS
Signal Word	CAUTION	WARNING
Acute Toxicity, oral LD ₅₀	(Category IV) Not labeled	(Category 5) May be harmful if swallowed
Acute Toxicity, dermal LD ₅₀	(Category IV) Not labeled	(Category 5) May be harmful in contact with skin
Acute Toxicity, inhalation LD ₅₀	(Category IV) Not labeled	(Category 4) Exclamation mark Irritant if inhaled
Skin Irritation	(Category IV) Not labeled	Not classified
Eye Irritation	(Category III) Causes moderate eye irritation	(Category 2B) Cause eye irritation
Sensitization	Not labeled	Not classified
Germ Cell Mutagenicity	Not labeled	Not classified
Carcinogenicity	Not labeled	Not classified
Reproductive/developmental Toxicity	Not labeled	Not classified
Specific target organ toxicity, single exposure	Not labeled	Not classified
Specific target organ toxicity, repeated exposure	Not labeled	Not classified
Aspiration	Not labeled	Not classified
Environmental (aquatic) toxicity	This product is not classified as environmental toxic	Not within OSHA's jurisdiction, therefore not required on SDS.

FIFRA Classification: This chemical is a pesticide product registered by the United States Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets

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(SDS), and for workplace labels of non-pesticide chemicals. The hazard information required on the pesticide label is reproduced below. The pesticide label also included other important information, including direction for use. Following is the hazard information as required on the pesticide label:

CAUTION

Cause moderate eye irritation

Avoid contact with eyes

Wash thoroughly with soap and water after handling

GHS labeling elements:

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Hazard pictograms:



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Hazard statements:

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Use in a well-ventilated area.

Wash hands thoroughly after handling.

Response:

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If in Eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

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Section 16 - Additional information

Reference: The information contained herein is believed to be accurate. It is provided independently of any sale of the product for purpose of hazard communication. It is not intended to constitute performance information concerning the product. No express warranty, or implied warranty of merchantability or fitness for a particular purpose is made with respect to the product or the information contained herein. This Safety Data Sheet was compiled with data and information from the following source: KOSHA, NITE, ESIS, NLM, SIDS, IPCS

SDS Date: 3/9/17