

**SAFETY DATA SHEET**  
 According to NCh. 2245:2021

Release Date: 30/05/2022.

Version: 04.


**SECTION 1: Identification of the substance or mixture and the company or company.**

Product Trade Name:	<b>BAFEX-N® (WP).</b>
Name of the active substance:	<b><i>Bacillus thuringiensis strain Anemophila, Bacillus cereus strain Bromeliad and Bacillus cereus strain Peumo.</i></b>
Recommended Uses:	<b>Biological Nematicide.</b>
<b>Provider Name:</b>	<b>Bio Insumos Nativa SpA.</b>
Supplier Address:	Parcela Antihue Lote 4 B2, Maule, Talca, Chile. Phone: +56-71-2970696. <a href="mailto:ventas@bionativa.cl">ventas@bionativa.cl</a>   <a href="http://www.bionativa.cl">www.bionativa.cl</a>
Provider's Phone Number:	PHONE: +56-71-2970696.
Emergency phone number in Chile:	CITUC TOXICOLOGICAL EMERGENCIAS. PHONE: +56-2-26353800.

**SECTION 2: Identification of the hazard(s).**
**Classification according to GHS/GHS:**

Route of exposure	Hazard Category	Hazard Indication:	A Word of Warning
<b>Oral:</b>	Category 5.	H303: May be harmful if swallowed.	Attention.
<b>Dermal:</b>	Category 5.	H313: May be harmful in case of skin contact.	Attention.
<b>Inhalation:</b>	Category 4.	H332: Harmful if inhaled.	Attention.
<b>Dermal irritation:</b>	Category 3.	H316: H316: Causes mild skin irritation.	Attention.
<b>Eye irritation:</b>	Classification 2B.	H320: Causes eye irritation.	Attention.
<b>Sensitization:</b>	Unrated.	-	-
<b>Aquatic Acute Fish and Aquatic Invertebrates:</b>	The product is not expected to be toxic or pathogenic or infectious to aquatic organisms.		

**GHS Label:**

Symbol:	Precautionary tips:
<b>Inhalation:</b> 	<b>Prevention:</b> <b>Inhalation</b> P261: Avoid breathing dust. P271: Use only outdoors or in a well-ventilated place. <b>Intervention:</b> <b>Inhalation:</b> P304 + P340. IN CASE OF INHALATION: Transport the person outdoors and keep him or her in a position that makes it easier for him or her to breathe. P312: Call a poison control center/doctor if the person is unwell.
<b>Oral, Dermal, Eye Irritation, Dermal:</b> No symbol.	<b>Prevention:</b> <b>Eye irritation:</b> P264: Wash thoroughly after handling. <b>Intervention:</b> <b>Oral:</b> <b>P301+P312: IN CASE OF INGESTION:</b> Call a POISON CENTER/doctor/if you are unwell. <b>Dermal:</b> <b>P302 + P312: IN CASE OF SKIN CONTACT:</b> Call a POISON CENTER/doctor/if you are unwell. <b>Eye irritation:</b> <b>P305 + P351 + P338: IN CASE OF CONTACT WITH EYES:</b> Rinse with water carefully for several minutes. Remove contact lenses when they are present and can be done easily. Continue washing. <b>P337 + P313:</b> If eye irritation persists: Consult a doctor. <b>Dermal irritation:</b>

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	<p><b>P332 + P313: IN CASE OF SKIN IRRITATION:</b> Consult a doctor/medical attention.  <b>Dermal:</b>  <b>P302 + P312: IN CASE OF SKIN CONTACT:</b> Call a POISON CENTER/doctor/if you are unwell.</p>
<p>Specific Classification: Chile Resolution SAG 2.196/2000: Specific badge: Other hazards:</p>	<p><b>IV Products that do not normally offer Danger.</b>   <b>Green Band-Care.</b>  It is non-flammable, non-combustible, non-explosive and non-reactive.</p>

**SECTION 3: Composition/information of the components.**

**In the case of a mixture:** It does not contain components that are classified as hazardous. *Bacillus thuringiensis* strain *Anemophila*, *Bacillus cereus* strain *Bromeliad* and *Bacillus cereus* strain *Peumo* do not have taxonomic proximity to pathogenic organisms.

	<b>Component 1</b>	<b>Component 2</b>	<b>Component 3</b>
GHS Classification:	<p><b>Oral:</b> Category 5. H303: May be harmful if swallowed.  <b>Dermal:</b> Category 5. H313: May be harmful in case of skin contact.  <b>Inhalation:</b> Category 4. H332: Harmful if inhaled.  <b>Dermal irritation:</b> Category 3. H316: H316: Causes mild skin irritation. <b>Eye irritation:</b> cclassification 2B. H320: Causes eye irritation.  <b>Sensitization:</b> Unclassified.  <b>ATTENTION.</b>  </p>	<p><b>Oral:</b> Category 5. H303: May be harmful if swallowed.  <b>Dermal:</b> Category 5. H313: May be harmful in case of skin contact.  <b>Inhalation:</b> Category 4. H332: Harmful if inhaled.  <b>Dermal irritation:</b> Category 3. H316: H316: Causes mild skin irritation. <b>Eye irritation:</b> cclassification 2B. H320: Causes eye irritation.  <b>Sensitization:</b> Unrated  <b>ATTENTION.</b>  </p>	<p><b>Oral:</b> Category 5. H303: May be harmful if swallowed.  <b>Dermal:</b> Category 5. H313: May be harmful in case of skin contact.  <b>Inhalation:</b> Category 4. H332: Harmful if inhaled.  <b>Dermal irritation:</b> Category 3. H316: H316: Causes mild skin irritation. <b>Eye irritation:</b> cclassification 2B. H320: Causes eye irritation.  <b>Sensitization:</b> Unrated  <b>ATTENTION.</b>  </p>
Systematic chemical designation:	EC No.: 614-245-1*.	Not determined.	Not determined.
Common or generic name:	<i>Bacillus thuringiensis</i> Anemophila strain.	<i>Bacillus cereus</i> Bromeliad strain.	<i>Bacillus cereus</i> Peumo strain
Concentration Range:	0.8% m/m (8 g/kg)	0.8% m/m (8 g/kg)	0.8% m/m (8 g/kg)
CAS Number:	68038-71-1 *	Not determined.	Not determined.

\* *Bacillus thuringiensis*.

**SECTION 4: First Aid Measures.**

**IN CASE OF POISONING, TAKE THE PATIENT TO THE DOCTOR AND GIVE HIM THE LABEL.**

<b>Inhalation:</b>	Move the patient to fresh air. If the person is not breathing, give artificial respiration. Take to a care facility immediately.
<b>Skin contact:</b>	Remove clothing and shoes. Wash with plenty of water cleanses the skin and thoroughly between hair, nails and skin folds. Wash clothes before using again.
<b>Eye Contact:</b>	Wash with water for 15 minutes, keeping the eyelids well separated and lifted. If you wear contact lenses, remove them after the first 5 minutes and then continue rinsing. In addition, the lenses should not be used again.



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<b>Ingestion:</b>	<b>DO NOT INDUCE VOMITING.</b> Never give something by mouth to an unconscious person. In case of general discomfort, put the affected person on their side. Take them to the care center immediately.
<b>Main symptoms and effects, acute and delayed:</b>	It has no acute effects. In case of susceptible people: Diarrhea, cough, shortness of breath, itchy nose, irritation, and rarely causes gastroenteritis. No delayed effects are expected. Most important symptoms/effects: In immunocompromised patients or recent trauma. Prolonged and severe neutropenia, mucosal barrier damage, and transplantation.
Protecting First Responders: No special protection is required.	
Notes for Attending Physician: <b>Antidote:</b> None. <b>Medical Treatment:</b> Treat symptomatically.	

<b>SECTION 5: Fire-fighting measure.</b>	
Extinguishing Agents:	CO andCO2, chemical powder or foam solution. Inappropriate Extinguishing Agents does not apply.
Specific hazards:	There are no known special hazards related to the combustion and thermal degradation of this product.
Recommendations for Counter Personnel Fire:	<p><b>Small Fire:</b> Local control with trained personnel and extinguishing agents: Fire extinguisher.</p> <p><b>Large Fire:</b> <b>Public safety:</b> Call the emergency response phone number (Fire Department) first. Initial evacuation. Keep unauthorized personnel away. Stay upwind, in high areas and/or upstream.</p> <p><b>Procedure for Fire Control by Authorized Personnel (Firefighters):</b> Move containers from the fire area if you can do so safely. Make a containment dam for the water that controls the fire for later disposal; Don't spill the material on me.</p> <p><b>Fire Involving Tanks or Railcars or Trailers and Their Loads:</b> If a tank, railroad car, or tank car is involved in a fire, AISLE is involved in a fire. Fight the fire from a maximum distance or use fixed hose holders or regulator sliders. Do not put water in the containers. Cool containers with jets of water until long after the fire has been extinguished. Remove immediately if an increasing sound comes out of the vent safety mechanisms, or if the tank begins to discolor. ALWAYS stay away from tanks engulfed in fire. For massive fires, use fixed hose holders or regulator chiflons; If this is impossible, retreat from the area and let it burn. Precautions for Emergency Personnel and/or Firefighters: Only the firefighters' structural protective suit is required to fight the fire. It offers no special hazards.</p>



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**SECTION 6: Measures to be taken in the event of an accidental spill/spill.**

Personal Precautions,  
Protective Equipment, and  
Emergency Procedure:

**Personal precautions:** Avoid inhalation, ingestion, and contact with skin and eyes. Ensure adequate ventilation, especially in confined areas.

**Protective Equipment:**

**Small Spill:**

Only basic equipment is required: rubber gloves, rubber boots, long-sleeved waterproof overalls , face mask and goggles.

**Large Spill:**

Only the firefighters' structural protective suit is required and only the basic equipment is required: rubber gloves, rubber boots, long-sleeved waterproof overalls, face mask, and goggles to catch the spill. It offers no special hazards.

**Emergency Procedure:**

**Spills onto pavements/natural soil:**

**Small Spill:**

- You should demarcate the area with absorbent cords, sand or sawdust to demarcate the area and avoid contact.
- Subsequently, the spill will be completely absorbed, with absorbent material and collected in a container specially designated for this purpose, duly identified and sent to a final disposal facility authorized by the competent authority.
- Only basic application equipment is required, rubber gloves, rubber boots, long-sleeved waterproof overalls, face mask and goggles.

**Large Spill:**

- Call the emergency response phone number first.
- Keep unauthorized personnel away.
- Stay with a tailwind.
- Demarcate the area with absorbent cords, sand or sawdust.
- Absorb the spill completely, with absorbent material, sand or sawdust.
- Do not allow the spill with the absorbent material to rise into the air, cover them with a plastic cover.
- Collect spilled material, transfer it to a properly identified container and send it to an approved final disposal facility for this type of waste.
- Personal Protective Equipment with respiratory protection is required.

**Spills into the Water:**

- Call the emergency response phone number first.
- Notify neighbors who may be affected immediately.
- Notify the country's Health Entity.
- Contain spill expansion with absorbent cords.
- Subsequently, the product must be absorbed using cloths, sleeves or other absorbent material until exhausting efforts.
- Spill control wastes will be placed in containers, properly identified and sent to an authorized final disposal facility for this type of waste.



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<p>Environmental Precautions:</p>	<p><b>It doesn't offer any special hazards</b>, but:</p> <ul style="list-style-type: none"> <li>•Prevent their introduction into waterways, sewers, basements or confined areas.</li> <li>•Do not dump into surface water or sewer system.</li> <li>• Prevent product penetration into drains.</li> <li>•Must not be released into the environment.</li> <li>• <b>PROTECT THE ENVIRONMENT WITH GOOD AGRICULTURAL PRACTICES.</b></li> <li>•<b>DO NOT CONTAMINATE RIVERS, LAKES, PONDS, AND GROUNDWATER SOURCES WITH THIS PRODUCT OR WITH EMPTY CONTAINERS OR PACKAGING.</b></li> </ul>
<p>Containment and Clean-Up Methods and Materials (Recovery, Neutralization and Final Disposal):</p>	<p>Collect the spilled material, transfer it to a properly identified container and send it to an authorized facility for this type of waste.</p> <ul style="list-style-type: none"> <li>-Recovery: Not applicable.</li> <li>-Neutralization: Not applicable.</li> <li>-Final disposal: Dispose of waste in accordance with local, provincial and national regulations.</li> </ul>
<p>Additional Disaster Prevention Measures:</p>	<p>Not applicable.</p>
<p>Other Relative Indications To spills:</p>	<p>No.</p>

**SECTION 7: Handling and Storage.**

**Manipulation:**

Precautions for safe handling:

**Handling During Manufacturing/Formulation:**

Avoid contact with eyes, skin, and clothing. Do not ingest. Do not inhale.

Manufacture/formulation of the product only by trained and authorized persons.

Do not eat, drink or smoke during the manufacture/formulation of the product.

During manufacturing/formulation, personal protective equipment is required: rubber gloves, rubber boots, long-sleeved waterproof overalls , face mask and goggles.

Immediately remove contaminated clothing and bathe at the end of Manufacturing/Formulation.

**Use and Handling:**

Avoid contact with eyes, skin, and clothing. Do not ingest. Do not inhale.

Handle outdoors or in a well-ventilated place.

Keep out of reach of children and inexperienced people.

Handling and application of the product only by trained and authorized persons.

**DO NOT EAT, SMOKE, OR DRINK DURING HANDLING AND APPLICATION OF THIS PRODUCT.**

**SHOWER AFTER WORK AND PUT ON CLEAN CLOTHES.**

During the handling and application of the product, use: rubber gloves, rubber boots, long-sleeved waterproof overalls, face mask and goggles.

Do not mix products during handling and application.

Immediately remove contaminated clothing and bathe at the end of handling and application.



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Contact Prevention:	This Product can penetrate by the following routes: Oral, dermal, ocular and inhalation, therefore, avoid contact.
<b>Storage:</b> Conditions for safe storage:	<p><b>DO NOT STORE THIS PRODUCT IN DWELLING HOUSES. KEEP LOCKED OUT OF THE REACH OF CHILDREN. STAY AWAY FROM CHILDREN, UNAUTHORIZED PERSONS, PETS, FOOD, AND MEDICINES.</b></p> <p>Keep separate from any type of food, fodder, seeds or any other that are intended for human or animal use or consumption. Storage Temperature: Ambient temperature: 25°C.</p> <p>Store the product in the original, labeled container in a dry, cool, well-ventilated place, recommended storage temperature and ventilated. Shelf life: 24 months. Do not store near heat, open flame, direct sunlight, or hot surfaces. It is recommended not to mix with other pesticides. Use only packaging that ensures the integrity of the inner bags.</p>
Technical measures:	The product should be stored in secure warehouses that have good ventilation, cement flooring, and spill containment systems. Do not store in places where corrosive or explosive products are found.
Incompatible substances and mixtures:	Incompatibility for joint applications with cupric compounds and antibiotics. Do not mix BAFEX-N® (WP) with other pesticides without first performing a compatibility test. Check with the manufacturer's compatibility list.

**SECTION 8: Exposure Controls/Personal Protection.**

<b>Control Parameters:</b>	It does not expect occupational exposure to this product to be a cause for concern because of the low toxicity profile and on the assumption that precautionary labeling instructions aim to minimize worker exposure.
- Weighted allowable limit (LPP):	Not determined by DS. 594 Minsal Chile/OSHA.
- Absolute permissible limit (LPA):	Not determined by DS. 594 Minsal Chile/OSHA.
- Temporary permissible limit (LPT):	Not determined by DS. 594 Minsal Chile/OSHA.
- Tolerance limit biological:	Identification of bacteria in blood and joint fluids.
<b>Personal Protective Equipment:</b>	<b>USE THE FOLLOWING PROTECTIVE EQUIPMENT WHEN HANDLING THE PRODUCT, DURING MIXING PREPARATION, LOADING AND APPLICATION:</b>
Respiratory Protection:	Mask.
Hand Protection:	Rubber gloves.
Eye Protection:	Spectacles.
Skin and body protection:	Rubber boots, long-sleeved waterproof overalls .
<b>Engineering Measurements:</b>	Showers, eyewash stations, ventilation systems.

**SECTION 9: Physical and Chemical Properties.**



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Physical Condition:	Solid.
How it's presented:	Dust.
Colour:	Beige.
Smell:	Characteristic.
pH:	7.8+/-0.1 (1% w/v in water at 20°C).
Melting Point/Freezing Point:	Not applicable.
Starting Point and Boiling Interval:	Not applicable.
Flash Point:	Non-flammable.
Upper/Lower Flammability or Explosiveness Limit:	It does not generate toxic combustion products, only CO and CO <sub>2</sub> .
Vapor pressure (25°C):	Not relevant due to the nature of the active ingredient, not providing characteristic information of danger.
Vapor Density:	Not relevant due to the nature of the active ingredient, not providing characteristic information of danger.
Absolute density (20°C):	989.6 kg/m <sup>3</sup> .
Solubilities:	Solubility in water: < 1 g/L Insoluble (25°C).
	Miscibility in water: Under test conditions of 30.0 ± 2°C, after 1 hour at rest, it was immiscible in standard water with a hardness of 20 mg/kg CaCO <sub>3</sub> .
	Solubility/miscibility in organic solvents: Xylol: 2.2 g/l. Insoluble in: Organic solvents, ethyl acetate, heptane, dichloroethane, methanol, acetone.
Partition coefficient (n-octanol/water (Log Kow)):	Not relevant due to the nature of the active ingredient, not providing characteristic information of danger.
Auto-ignition temperature:	Not applicable.
Decomposition Temperature:	50-80°C would affect the technical characteristics of the formulated product.
Evaporation Rate:	Not applicable.
Viscosity:	Not applicable.
Explosive properties:	Non-explosive.
Oxidizing properties:	Non-oxidizing or oxidizing.
Corrosivity:	Non-corrosive to: carbon steel, aluminum, copper, brass.
Foam persistence:	Maximum: 0 ml after 1 min.

**SECTION 10: Stability and Reactivity.**

Reactivity:	Non-reactive.
Chemical Stability:	Stable at normal discharge temperature.
Dangerous reactions:	It doesn't happen.
Conditions to avoid:	Humidity and high temperatures 50-80°C.
Incompatible Materials:	Incompatibility for joint applications with cupric compounds and antibiotics. Do not mix BAFEX-N® (WP) with other pesticides without first performing a compatibility test. Check with the manufacturer's compatibility list.
Hazardous Decomposition Products:	It does not generate toxic combustion and decomposition products, only CO <sub>2</sub> .

**SECTION 11: Toxicological Information.**

**No known reports of adverse effects on human health. Since *Bacillus thuringiensis* was one of the first microorganisms recorded in the United States, it was required to undergo an extremely rigorous mammalian toxicity and infectivity evaluation program, EPA concluded that *Bacillus thuringiensis* products will**

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<b>Acute toxicity:</b>	not pose unreasonable risks to human health or the environment. For <i>Bacillus cereus</i> the potential risks, if any, to humans are considered negligible (EPA).
<b>Acute Oral Toxicity:</b>	LD <sub>50</sub> : >2000 mg/kg. <b>WHO classification: Category IV "Products that normally do not pose a hazard".</b>
<b>Acute dermal toxicity:</b>	LD <sub>50</sub> : > 2000 g/kg.
<b>Acute Inhalation Toxicity:</b>	LC <sub>50</sub> : > 2.4 mg/L.
<b>Skin Irritation/Corrosion:</b>	Mildly irritating.
<b>Severe Eye Injuries/Eye Irritation:</b>	Mildly irritating to the eyes.
<b>Respiratory or cutaneous sensitization:</b>	It's not a sensitizer.
<b>Subchronic and Chronic Toxicity:</b>	The U.S. Environmental Protection Agency (EPA) does not require testing for <i>Bacillus thuringiensis</i> for Chronic Toxicity (Centre for Organic Agriculture Canada (OACC)). For <i>Bacillus cereus</i> , Level II testing involving chronic testing was not required, as no survival, replication, infectivity, toxicity, or persistence of the microbial agent was observed in the test animals treated in the Level I Acute Oral Infectivity (EPA) test.
<b>Reproductive cell mutagenicity:</b>	
<i>Bacillus thuringiensis</i> strain Anemophila:	Non-mutagenic.
<i>Bacillus cereus</i> strain Bromeliad:	Non-mutagenic.
<i>Bacillus cereus</i> cepa Peumo:	Non-mutagenic.
<b>Carcinogenicity:</b>	
<i>Bacillus thuringiensis</i> strain Anemophila:	Non-carcinogenic.
<i>Bacillus cereus</i> strain Bromeliad:	Non-carcinogenic.
<i>Bacillus cereus</i> cepa Peumo:	Non-carcinogenic.
<b>Reproductive Toxicity:</b>	
<i>Bacillus thuringiensis</i> strain Anemophila:	Non-toxic reproductive.
<i>Bacillus cereus</i> strain Bromeliad:	Non-toxic reproductive.
<i>Bacillus cereus</i> cepa Peumo:	Non-toxic reproductive.
<b>Specific Organ Toxicity – Single Exposure:</b>	
There is no known damage caused to the organism (body and different organs) of humans and mammals:	
<i>Bacillus thuringiensis</i> strain Anemophila:	No toxicological endpoints were identified.
<i>Bacillus cereus</i> strain Bromeliad:	No toxicological endpoints were identified.
<i>Bacillus cereus</i> cepa Peumo:	No toxicological endpoints were identified.



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<b>Specific toxicity to certain organs – repeated exposures:</b>									
There is no known damage caused to the organism (body and different organs) of humans and mammals:									
<b>Bacillus thuringiensis strain Anemophila:</b>	No toxicological endpoints were identified.								
<b>Bacillus cereus strain Bromeliad:</b>	No toxicological endpoints were identified.								
<b>Bacillus cereus cepa Peumo:</b>	No toxicological endpoints were identified.								
Aspiration hazard:	It is not dangerous by this route of exposure.								
Possible routes of exposure:	Oral, dermal, ocular and inhalation, therefore avoid contact.								
Symptoms related to physical, chemical and toxicological characteristics:	It has no acute effects. In case of susceptible people: Diarrhea, cough, shortness of breath, itchy nose, irritation, and rarely causes gastroenteritis. No delayed effects are expected. Most important symptoms/effects: In immunocompromised patients or recent trauma. Prolonged and severe neutropenia, mucosal barrier damage, and transplantation.								
Other pertinent information on adverse health effects:	<p><b>Toxicokinetics:</b></p> <table border="1"> <tr> <td><b>Absorption:</b></td> <td>There is no bibliographic background of % oral absorption Toxicological data demonstrated that the strains of <i>Bacillus thuringiensis</i> and <i>Bacillus cereus</i> are not toxic, infectious, or pathogenic to mammals. No risks to chronic, immune, or endocrine exposures were identified.</td> </tr> <tr> <td><b>Metabolism:</b></td> <td>The metabolic pathways of these strains of <i>Bacillus thuringiensis</i> and <i>Bacillus cereus</i> have not been characterized in detail through the literature.</td> </tr> <tr> <td><b>Distribution:</b></td> <td>There are no specific bibliographic sources of distribution for strains of <i>Bacillus thuringiensis</i> and <i>Bacillus cereus</i>.</td> </tr> <tr> <td><b>Excretion:</b></td> <td>There are no specific bibliographic sources of excretion for <i>Bacillus thuringiensis</i> and <i>Bacillus cereus</i> strains.</td> </tr> </table> <p>Pathogenicity and acute infectivity (oral, dermal and inhalational): It is not pathogenic or infectious. Endocrine disruption: This product is unlikely to have estrogenic or endocrine effects because the strains are virtually non-toxic to mammals. Neurotoxicity: It is not a neurotoxic product. Immunotoxicity: Does not affect the immune system.</p>	<b>Absorption:</b>	There is no bibliographic background of % oral absorption Toxicological data demonstrated that the strains of <i>Bacillus thuringiensis</i> and <i>Bacillus cereus</i> are not toxic, infectious, or pathogenic to mammals. No risks to chronic, immune, or endocrine exposures were identified.	<b>Metabolism:</b>	The metabolic pathways of these strains of <i>Bacillus thuringiensis</i> and <i>Bacillus cereus</i> have not been characterized in detail through the literature.	<b>Distribution:</b>	There are no specific bibliographic sources of distribution for strains of <i>Bacillus thuringiensis</i> and <i>Bacillus cereus</i> .	<b>Excretion:</b>	There are no specific bibliographic sources of excretion for <i>Bacillus thuringiensis</i> and <i>Bacillus cereus</i> strains.
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<b>Distribution:</b>	There are no specific bibliographic sources of distribution for strains of <i>Bacillus thuringiensis</i> and <i>Bacillus cereus</i> .								
<b>Excretion:</b>	There are no specific bibliographic sources of excretion for <i>Bacillus thuringiensis</i> and <i>Bacillus cereus</i> strains.								

<b>SECTION 12: Ecological information</b>	
<b>Ecotoxicity (EC, IC and LC):</b>	No known reports of adverse effects on the environment. EPA concluded that the products <i>Bacillus thuringiensis</i> and <i>Bacillus cereus</i> will not pose unreasonable risks to the environment.
<b>Aquatic organisms:</b>	
<b>Fishes:</b>	The product is not expected to be toxic or pathogenic or infectious to fish.
<b>Daphnia magna:</b>	The product is not expected to be toxic or pathogenic or infectious to freshwater invertebrates.



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<b>Algae:</b>	No pathogenicity, phytotoxicity or any other adverse effects on plants have been indicated.
<b>Terrestrial organisms:</b>	
<b>Terrestrial plants:</b>	It is not expected to be toxic, pathogenic, or infectious to land plants.
<b>Poultry:</b>	The product is not expected to be toxic or pathogenic or infectious to birds.
<b>Bees:</b>	The product is not expected to be toxic or pathogenic or infectious to bees.
<b>Arthropods other than bees:</b>	The product is not expected to be toxic or pathogenic or infectious.
<b>Non-target earthworms or soil microorganisms:</b>	No adverse effects.
<b>Persistence and degradability:</b>	
<b>Soil:</b>	
<b>Bacillus thuringiensis strain Anemophila:</b>	These 3 species live in the top layer of soils, rich in organic matter. This is in line with the observation of greatly reduced survival rates with increasing soil depths, as population growth and germination would stop due to nutrient depletion, so there is no risk of uncontrolled growth.
<b>Bacillus cereus strain Bromeliad:</b>	
<b>Bacillus cereus cepa Peumo:</b>	
<b>Water:</b>	
<b>Bacillus thuringiensis strain Anemophila:</b>	The EPA Agency believes that it is unlikely that these 3 species within the soil will leach into the water due to the large size of the fungal spores and the fact that they attach to soil particles. Even if oral exposure occurred through drinking water, EPA concludes that there is reasonable certainty that no harm will result from exposure to the residues of these 3 species in all anticipated exposures to drinking water due to the lack of acute oral toxicity/pathogenicity to mammals.
<b>Bacillus cereus strain Bromeliad:</b>	
<b>Bacillus cereus cepa Peumo:</b>	
<b>Air:</b>	
<b>Bacillus thuringiensis strain Anemophila:</b>	These 3 species are not expected to be predominant in this environmental behavior, because: Product survival during aerosolization is often limited due to stresses such as shear forces, desiccation, temperature, and exposure to UV light. These species occur naturally in the air at low frequency and low concentration.
<b>Bacillus cereus strain Bromeliad:</b>	
<b>Bacillus cereus cepa Peumo:</b>	
<b>Bioaccumulative potential:</b>	No cumulative effect is anticipated.
<b>Mobility on the ground:</b>	
<b>Bacillus thuringiensis strain Anemophila:</b>	These 3 species are considered to live in the top layer of soils, rich in organic matter. There is no risk of uncontrolled growth as the growth and germination of the population would stop due to nutrient depletion.
<b>Bacillus cereus strain Bromeliad:</b>	
<b>Bacillus cereus cepa Peumo:</b>	

**SECTION 13: Final Disposition Information.**

<b>Residues/Remnants/Waste:</b>	Controlled incineration in furnaces at high temperatures > 1000°C with combustion and destruction efficiency: 99.9% and/or arranged if the national or local legislation in force allows it. In case of spills or pesticide waste, collect them with sawdust or absorbent material, collect them in an airtight container, dispose of them in a sanitary landfill authorized by the regulatory entity.
<b>Contaminated Packaging and Packaging:</b>	<b>"THE USE OF CONTAINERS OR PACKAGING IN A WAY THAT IS DIFFERENT FROM WHAT THEY WERE DESIGNED FOR ENDANGERS HUMAN HEALTH AND THE ENVIRONMENT."</b> <b>Container:</b>



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	Dispose of the packaging in a clearly identified place, until the health authority specifies its final destination. <b>Contaminated packaging:</b> Dispose of the packaging/packaging in a clearly identified place, until the health authority specifies its final destination. Uncontaminated packaging may be recycled.
<b>Prohibition of discharge into wastewater:</b>	The discharge of untreated wastewater into bodies of RIVERS, LAKES, PONDS AND UNDERGROUND AND SURFACE WATER sources is prohibited.
<b>Other Special Precautions</b>	<b>Contaminated material:</b> The contaminated material will be transferred to properly labeled containers for further disposal in facilities approved by the health and environmental authority. <b>Cleaning and Decontamination Procedures for Application Equipment and Contaminated Areas:</b> The equipment (inside and outside) that contained the product should be cleaned with water (triple rinse) and the rinse water should be applied to the object of application. In contaminated areas, collect the material by normal means, transfer it to a properly identified container and send it to an approved facility for this type of waste.

**SECTION 14: Transportation Information.**

Regulations	Mode of transport		
	Terrestrial ADR/RID	Maritime IMDG	Aerial IATA
<b>UN Number:</b>	Non-hazardous goods for transport.	Non-hazardous goods for transport.	Non-hazardous goods for transport.
<b>Official Transportation Designation:</b>	Not applicable.	Not applicable.	Not applicable.
<b>Class or Division:</b>	Not applicable.	Not applicable.	Not applicable.
<b>UN Secondary Hazard:</b>	Not applicable.	Not applicable.	Not applicable.
<b>Packing Group:</b>	Not applicable.	Not applicable.	Not applicable.
<b>Hazard identification badge according to NCh 2190:</b>	Not applicable.	Not applicable.	Not applicable.
<b>Environmental Hazards:</b>	There are no environmental hazards.	There are no environmental hazards.	No environmental hazards are generated.
<b>Bulk transport (MARPOL 972 73/78 - Annex II-; IBC Code):</b>	There are no special precautions.	There are no special precautions.	There are no special precautions.

**General Precautions:**

- Transport palletized.
- Do not transport food, vegetable products or any other products that are intended for human or animal use or consumption.
- Do not transport with flammable or explosive elements.
- The conveyor must always have the safety data sheet at hand.

**SECTION 15: Governing Rules.**

<b>National:</b>	
<b>NCh No. 382 in force:</b>	Hazardous Substances - Terminology and General Classification.
<b>NCh No. 2190 in force:</b>	Land Transport of Dangerous Goods - Hazard Identification Badges.
<b>NCh No. 2245 in force:</b>	Safety Data Sheet for Chemicals - Contents and Order of Sections.
<b>NCh No. 2979 in force:</b>	Hazardous Substances - Segregation and packaging in land transport.
<b>NCh N°1411/4 in force:</b>	Risk Prevention – Part 4: Identifying Material Hazards.
<b>D.S. No. 298 in force:</b>	Regulations for the Transport of Hazardous Substances on Streets and Roads.
<b>D.S. No. 148 in force:</b>	Sanitary Regulations on Hazardous Waste Management.
<b>D.S. No. 594 in force:</b>	Regulations on Basic Health and Environmental Conditions in Workplaces.
<b>D.S. No. 43 in force:</b>	Regulations on the Storage of Hazardous Substances.



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<b>Resolution No. 408 Exempt:</b>	List of Substances Hazardous to Health.
<b>International:</b>	
<b>WMS (2019 rev8):</b>	Globally Harmonized System of Classification and Labelling of Chemicals.
<b>NFPA 704:</b>	Standard System for Identifying Material Hazards for Emergency Response, 2017.
<b>REACH:</b>	Regulations on the Registration, Evaluation, Authorisation and Restriction of Chemical Substances.
<b>The recipient should verify the possible existence of local regulations applicable to the product.</b>	

<b>SECTION 16: Other Information.</b>	
<b>Biological properties of the microorganisms <i>Bacillus thuringiensis</i> strain <i>Anemophila</i>, <i>Bacillus cereus</i> strain <i>Bromeliad</i> and <i>Bacillus cereus</i> strain <i>Peumo</i>:</b>	
<p>The <i>Bacillus</i> strains, used in the product, exhibit Nematicidal action, through competition, inhibition and microparasitism. In addition, it has a biostimulant action on growth, improving vegetative and root development. The formula contains endospores, which are recognized as nature's most resistant survival structures, being able to withstand high temperatures and absolute lack of humidity. For the application of the product, the instructions on the label must be strictly followed and the safety elements must always be used.</p> <p>For the application of the product, the instructions on the label must be strictly followed and the safety elements must always be used.</p>	
<b>Track Changes:</b>	Update to NCh 2245 year 2021.
<b>Abbreviations and acronyms:</b>	
<b>CAS:</b>	Unique numerical identification for chemical compounds, polymers, biological sequences, preparations and alloys.
<b>LD50:</b>	Lethal dose, 50%.
<b>CL50:</b>	Lethal concentration, 50%.
<b>IATA:</b>	International Air Transport Association.
<b>IMDG:</b>	International Maritime Dangerous Goods Code.
<b>ADR:</b>	Accord européen relatif au transport international des marchandises dangereuses par route (European Agreement concerning the International Carriage of Dangerous Goods by Road).
<b>TAKE:</b>	European Chemicals Agency.
<b>EPA:</b>	U.S. Environmental Protection Agency.
<b>OSHA:</b>	Occupational Safety and Health Administration.
<b>NFPA:</b>	National Fire Protection Association.
<b>NCh:</b>	Chilean Standard.
<b>SDS:</b>	Safety Data Sheet.
<b>D.S.</b>	Supreme Decree.
<b>BCF:</b>	Bioconcentration factor in fish.
<b>DOT:</b>	Department of Transportation.
<b>NIOSH:</b>	National Institute for Occupational Safety and Health.
<b>FAO:</b>	Food and Agriculture Organization of the United Nations.
<b>NU:</b>	United Nations (UN) number is a 4-digit serial number assigned to a hazardous substance in the United Nations system.
<b>NCH:</b>	Chilean Regulations.
<b>References:</b>	Commodity Safety Data Sheets, EPA, ECHA, FAO, OSHA, ACGIH, DOT, NIOSH, NFPA.

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<b>Safety Sign (NCh1411/4):</b>			
		<b>Oral, dermal:</b> Blue: 1 Slight risk.	<b>Via inhalation:</b> Blue: 2 Moderate risk.
<b>Current Revision Date:</b>	5/30/2022.		
<b>Referenced Hazard Warnings:</b>			
<p><b>ATTENTION.</b></p> 			
<b>Classification according to GHS/GHS:</b>			
<b>Route of exposure</b>	<b>Hazard Category</b>	<b>Hazard Indication:</b>	<b>A Word of Warning</b>
<b>Oral:</b>	Category 5.	H303: May be harmful if swallowed.	Attention.
<b>Dermal:</b>	Category 5.	H313: May be harmful in case of skin contact.	Attention.
<b>Inhalation:</b>	Category 4.	H332: Harmful if inhaled.	Attention.
<b>Dermal irritation:</b>	Category 3.	H316: H316: Causes mild skin irritation.	Attention.
<b>Eye irritation:</b>	Classification 2B.	H320: Causes eye irritation.	Attention.
<b>Sensitization:</b>	Unrated.	-	-
<b>Aquatic Acute Fish and Aquatic Invertebrates:</b>	The product is not expected to be toxic or pathogenic or infectious to aquatic organisms.		
<b>Date Created:</b>	26/01/2018.		
<b>Next Revision Date:</b>	04/11/2022.		
<b>Limitation of Supplier Liability:</b>	In this act it is stated that the information provided in this document is timely and transparent, in accordance with the requirements of national and international standards, in turn, it is established that the inappropriate use of this product could generate damage to people, private property and/or the environment. It is advisable to read this document carefully and contact an expert for guidance if you require assistance.		

The data in this fact sheet were obtained from reliable sources. The options expressed in this Safety Data Sheet are those of trained professionals. The information provided in it is currently known on the subject. Considering that the use of this information and the products is beyond the control of the supplier, the Company assumes no responsibility for this concept. It is the user's obligation to determine the conditions of safe use of the product.