


SAFETY SHEET
According to NCh. 2245:2021

Version Date: 01/20/2022.
Version: 02.

SECTION 1: Identification of the substance or mixture and the company or company.	
Commercial Name of the Product:	NACILLUS® (WP).
Name of active substance:	<i>Bacillus subtilis</i> strain Antumávida, <i>Bacillus subtilis</i> strain Vilcún, <i>Bacillus licheniformis</i> strain Mallerauco, <i>Brevibacillus brevis</i> strain Maguellines and <i>Brevibacillus brevis</i> strain Maguellines I.
Recommended uses:	Biological bactericide.
Provider's name:	Bio Insumos Nativa SpA.
Supplier Address:	Antihue Plot Lot 4 B2, Maule, Talca, Chile. Phone: +56-71-2970696. sales@bionativa.cl www.bionativa.cl
Provider telephone number:	PHONE: +56-71-2970696.
Emergency telephone number in Chile:	CITUC TOXICOLOGICAL EMERGENCIES. PHONE: +56-2-26353800.

SECTION 2: Identification of the hazard or hazards.			
Classification according to GHS/GHS:			
Exposure route	Hazard category	Hazard statement:	Warning word
Oral:	Unrated.	-	-
Dermal:	Category 5.	H313: May be harmful in case of contact with skin.	Attention.
Inhalation:	Unrated.	-	-
Dermal irritation:	Category 3.	H316: Causes mild skin irritation.	Attention.
Eye irritation:	Classification 2B.	H320: Causes eye irritation.	Attention.
Sensitization:	Category 1B	H317: May cause an allergic skin reaction.	Attention.
Acute aquatic fish and aquatic invertebrates:	The product is not expected to be toxic or pathogenic or infectious to aquatic organisms.		
GHS label:			
Symbol:	Precautionary advice:		
Sensitization: 	Prevention: P261: Avoid breathing dust. P272: Contaminated work clothing should not be allowed to leave the workplace. P280: Wear protective gloves. Intervention: Sensitization: P302 + P352: If it comes into contact with the skin: Wash with plenty of water. P333 + P313: If skin irritation or rash occurs: Seek medical attention. P321: Specific treatment (see label and safety sheet) P362 + P364: Take off contaminated clothing and wash before reuse. Provision: P501: Dispose of contents/container in accordance with local/regional/national/international regulations.		
	Prevention: P264: Wash thoroughly after handling. Intervention: P302 + P312: IF ON SKIN: Call a POISON CENTER/doctor/if you feel unwell. P305 + P351 + P338: IF CONTACT WITH EYES: Rinse carefully with water for several minutes. Remove contact lenses when present and can be done easily. Continue with washing. P337 + P313: If eye irritation persists: Consult a doctor. P332 + P313: If skin irritation occurs: Get medical advice/attention.		
Dermal, Eye irritation, dermal irritation: No symbol.	Prevention: P264: Wash thoroughly after handling. Intervention: P302 + P312: IF ON SKIN: Call a POISON CENTER/doctor/if you feel unwell. P305 + P351 + P338: IF CONTACT WITH EYES: Rinse carefully with water for several minutes. Remove contact lenses when present and can be done easily. Continue with washing. P337 + P313: If eye irritation persists: Consult a doctor. P332 + P313: If skin irritation occurs: Get medical advice/attention.		
Specific classification:	IV Products that normally do not offer Danger.		
Chile SAG Resolution 2.196/2000:	Agricultural and Livestock Service Authorization No. 2,678 – O.		

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Specific distinctive :	Green Band-Care.
Other dangers :	It does not present a non-flammable, non-combustible, non-explosive and non-reactive product.

SECTION 3: Composition/information of components.

In the case of a mixture: It does not contain components that are classified as dangerous. The strains Antumávida, Mallerauco, Vilcún, Maguellines and Maguellines I do not present taxonomic proximity with pathogenic organisms.

	Component 1	Component 2	Component 3	
SGA Classification:	Oral: No classification. Dermal: Category 5. H313: May be harmful in case of contact with skin. Inhalation: Not classified. Dermal irritation: Category 3. H316: Causes mild skin irritation. Eye irritation: Classification 2B. H320: Causes eye irritation. Sensitization: Category 1B H317: May cause an allergic skin reaction. ATTENTION. 	Oral: No classification. Dermal: Category 5. H313: May be harmful in case of contact with skin. Inhalation: Not classified. Dermal irritation: Category 3. H316: Causes mild skin irritation. Eye irritation: Classification 2B. H320: Causes eye irritation. Sensitization: Category 1B H317: May cause an allergic skin reaction. ATTENTION. 	Oral: No classification. Dermal: Category 5. H313: May be harmful in case of contact with skin. Inhalation: Not classified. Dermal irritation: Category 3. H316: Causes mild skin irritation. Eye irritation: Classification 2B. H320: Causes eye irritation. Sensitization: Category 1B H317: May cause an allergic skin reaction. ATTENTION. 	
Systematic chemical name:	EC No.: 614-244-6**	EC No.: 614-244-6**	EC No.: Undetermined.	
Common or generic name:	<i>Bacillus subtilis</i> Antumávida strain	<i>Bacillus subtilis</i> strain Vilcún	<i>Bacillus licheniformis</i> Mallerauco strain	
Concentration range:	0.602% m/m (6.02 g/Kg)	0.602% m/m (6.02 g/Kg)	0.602% m/m (6.02 g/Kg)	
CAS number:	68038-70-0 **	68038-70-0 **	68038-66-4*	
	Component 4	Component 5		
SGA Classification:	Oral: No classification. Dermal: Category 5. H313: May be harmful in case of contact with skin. Inhalation: Not classified. Dermal irritation: Category 3. H316: Causes mild skin irritation. Eye irritation: Classification 2B. H320: Causes eye irritation. Sensitization: Category 1B H317: May cause an allergic skin reaction. ATTENTION. 	Oral: No classification. Dermal: Category 5. H313: May be harmful in case of contact with skin. Inhalation: Not classified. Dermal irritation: Category 3. H316: Causes mild skin irritation. Eye irritation: Classification 2B. H320: Causes eye irritation. Sensitization: Category 1B H317: May cause an allergic skin reaction. ATTENTION. 		
Systematic chemical name:	EC No.: Undetermined.	EC No.: Undetermined.		
Common or generic name:	<i>Brevibacillus brevis</i> Maguellines strain	<i>Brevibacillus brevis</i> strain Maguellines I		
Concentration range:	0.602% m/m (6.02 g/Kg)	0.602% m/m (6.02 g/Kg)		
CAS number:	Undetermined.	Undetermined.		

Bacillus licheniformis*. *Bacillus subtilis*.

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SECTION 4: First aid measures .	
IN CASE OF INTOXICATION, TAKE THE PATIENT TO THE DOCTOR AND GIVE HIM THE LABEL.	
Inhalation:	Move the patient to fresh air. If the person is not breathing, give artificial respiration. Take to a healthcare center immediately.
Skin contact:	Remove clothing and shoes. Wash with plenty of water to clean the skin and thoroughly between hair, nails and skin folds. Wash clothing before reuse.
Eye contact:	Wash with water for 15 minutes, keeping the eyelids well separated and raised. If the affected person uses contact lenses, remove them after the first 5 minutes and then continue rinsing. Additionally, the lenses should not be used again.
Ingestion:	DO NOT INDUCE VOMITING. Never give anything by mouth to an unconscious person. In case of general discomfort, place the affected person on their side. Take immediately to the healthcare center.
Main symptoms and effects, acute and delayed:	It does not present acute effects. In susceptible people: Diarrhea, cough, difficulty breathing, 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.
Protection of those who provide first aid:	No special protection required.
Notes for treating physician:	Antidote : None. Medical Treatment : Treat symptomatically.

SECTION 5: Fire fighting measure.	
Extinguishing agents:	CO and CO ₂ , chemical powder or foam solution. Inappropriate extinguishing agents do not apply.
Specific hazards:	There are no known special risks related to the combustion and thermal degradation of this product.
Recommendations for combat personnel	
Fires:	<p>Small fire: Local control with trained personnel and extinguishing agents: Fire extinguisher.</p> <p>Big fire: Public security: First call the emergency response telephone number (Fire Department). Initial evacuation. Keep unauthorized personnel away. Stay with the wind in your favor, in high areas and/or upstream.</p> <p>Procedure for controlling the fire by authorized personnel (Firefighters): Move containers from the fire area if you can do so without risk. Make a containment dam for the water that controls the fire for later disposal; do not scatter the material.</p> <p>Fire involving Tanks or Wagons or Trailers and their Loads: If a tank, railroad car or tank truck is involved in a fire, ISOLATE 800</p>

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meters in all directions; Also, consider initial evacuation to 800 meters around. Fight the fire from a maximum distance or use fixed hose holders or regulating nozzles.
Do not get water inside containers.
Cool containers with jets of water until well after the fire is out.
Leave immediately if a growing sound comes from the vent safety mechanisms, or if the tank begins to discolor.
ALWAYS stay away from tanks involved in fire.
For massive fires, use fixed hose supports or regulating nozzles; If this is impossible, withdraw from the area and let it burn.
Precautions for emergency personnel and/or firefighters: Only the structural protective suit of firefighters is required to fight the fire. It offers no special dangers.

SECTION 6: Measures to be taken in case of accidental release/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-leaved waterproof overalls, mask and goggles.

Large Spill:

Only the structural protective suit of firefighters is required and only the basic equipment is required: rubber gloves, rubber boots, waterproof long-leather overalls, mask and goggles to collect the spill. It offers no special dangers.

Emergency procedure:

Spills onto pavements/natural soil:

Small Spill:

- You must delimit the area with absorbent cords, sand or sawdust, in order to demarcate the area and avoid contact.
- The spill will then 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 the basic application equipment is required, rubber gloves, rubber boots, waterproof long-leather overalls, mask and goggles.

Large Spill:

- Call the emergency response telephone number first.
- Keep unauthorized personnel away.
- Stay with the wind in your favor.
- Delimit the area with absorbent cords, sand or sawdust.
- Completely absorb the spill with absorbent material such as sand or sawdust.
- Do not allow the spill with the absorbent material to rise into the air, cover it with a plastic cover.
- Collect the spilled material, transfer it to a properly identified container and send it to a final disposal facility authorized for this type of waste.
- Personal Protective Equipment with respiratory protection is required.

Spills into Water:



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<p>Environmental precautions:</p>	<ul style="list-style-type: none"> •Call the emergency response telephone number first. •Notify neighbors who may be affected immediately. •Notify the country's Health Entity. •Contain the expansion of the spill with absorbent cords. •Subsequently, you must absorb the product using cloths, sleeves or other absorbent material until you exhaust your efforts. •The waste resulting from spill control will be placed in containers, duly identified and sent to a final disposal facility authorized for this type of waste. <p>It offers no special dangers , but:</p> <ul style="list-style-type: none"> •Prevent its introduction into water courses, sewers, basements or confined areas. •Do not throw into surface waters or sewage system. •Prevent the penetration of the product into drains. •Should not be released into the environment. <p>•PROTECT THE ENVIRONMENT WITH GOOD AGRICULTURAL PRACTICES.</p> <p>•DO NOT POLLUTE RIVERS, LAKES, PONDS AND GROUNDWATER SOURCES WITH THIS PRODUCT OR WITH EMPTY CONTAINERS OR PACKAGING.</p>
<p>Containment and cleaning methods and materials (Recovery, neutralization and final disposal):</p>	<p>Collect 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"> -Recovery: Not applicable. -Neutralization: Not applicable. -Final disposition: Dispose of waste in accordance with local, provincial and national regulations.
<p>Additional disaster prevention measures:</p>	<p>Does not apply.</p>
<p>Other relative information to spills/spills:</p>	<p>None.</p>

SECTION 7: Handling and storage.

Handling:

Precautions for safe handling:

Handling during manufacturing/Formulation:

Avoid contact with eyes, skin and clothing. Do not eat. Do not inhale. Manufacture/formulation of the product only by trained and authorized people.

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

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

Immediately remove contaminated clothing and bathe upon completion of Manufacturing/formulation.

Use and Handling:

Avoid contact with eyes, skin and clothing. Do not eat. Do not inhale. Handle outdoors or in a well-ventilated place.

Keep out of the reach of children and inexperienced people.

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

DO NOT EAT, SMOKE OR DRINK WHEN HANDLING AND APPLYING THIS PRODUCT.

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	<p>HAVE A SHOWER AFTER WORKING AND WEAR CLEAN CLOTHES.</p>
Contact prevention:	<p>When handling and applying the product, use: rubber gloves, rubber boots, long-leaved waterproof overalls, mask and goggles.</p> <p>Do not mix products during handling and application. Immediately remove contaminated clothing and bathe after handling and application.</p> <p>This Product can penetrate through the following routes: Oral, dermal, ocular and inhalation, therefore avoid contact.</p>
<p>Storage: Conditions for safe storage:</p>	<p>DO NOT STORE THIS PRODUCT IN ROOMS. KEEP LOCKED OUT OF THE REACH OF CHILDREN. KEEP AWAY FROM CHILDREN, UNAUTHORIZED PERSONS, DOMESTIC ANIMALS, FOOD AND MEDICATIONS.</p> <p>Keep separate from any type of food, forage, seeds or any others that are intended for human or animal use or consumption.</p> <p>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.</p> <p>Shelf life: 24 months.</p> <p>Do not store near heat, open flame, direct sunlight or hot surfaces. It is recommended not to mix with other pesticides.</p> <p>Only use packaging that ensures the integrity of the internal bags.</p>
Technical measures:	<p>The product must be stored in safe warehouses that have good ventilation, a cement floor and a spill containment system. Do not store in places where corrosive or explosive products are found.</p>
Incompatible substances and mixtures:	<p>Incompatibility for applications with joints with cupric compounds and antibiotics. Do not mix Nacillus® (WP) with other pesticides without first performing a compatibility test. Check compatibility list with the manufacturer.</p>

SECTION 8: Exposure controls/personal protection.

<p>Control parameters:</p> <p>- Weighted allowable limit (LPP):</p> <p>- Absolute permissible limit (LPA):</p> <p>- Temporary permissible limit (LPT):</p> <p>- Tolerance limit biological:</p>	<p>Occupational exposure to this product is not expected to be a cause for concern due to the low toxicity profile and the assumption that precautionary labeling instructions aim to minimize worker exposure. Not determined by DS. 594 Minsal Chile/OSHA.</p> <p>Not determined by DS. 594 Minsal Chile/OSHA.</p> <p>Not determined by DS. 594 Minsal Chile/OSHA.</p> <p>Identification of bacteria in blood and joint fluids.</p> <p>Identification in blood and joint fluids.</p>
<p>Personal protection items:</p> <p>Respiratory protection:</p>	<p>USE THE FOLLOWING PROTECTIVE EQUIPMENT WHEN HANDLING THE PRODUCT, DURING MIX PREPARATION, LOADING AND APPLICATION:</p>

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Hand protection:	Face mask. Rubber gloves.
Eye protection:	Goggles.
Skin and body protection:	Rubber boots, long-leaved waterproof overalls.
Engineering measures:	Showers, eyewash stations, ventilation systems.

SECTION 9: Physical and chemical properties.

Physical State:	Solid.
How it is presented:	Dust.
Color:	Beige.
Smell:	Characteristic.
pH:	6.9+/-0.1 (1% w/v in water at 20°C).
Melting point/freezing point:	Does not apply.
Initial boiling point and boiling range:	Does not apply.
Flashpoint:	Non-flammable.
Upper/lower flammability or Explosive limit:	It does not generate toxic combustion products, only CO and CO ₂ .
Vapor pressure (25°C):	Not relevant due to the nature of the active ingredient, not providing characteristic hazard information.
Vapor density:	Not relevant due to the nature of the active ingredient, not providing characteristic hazard information.
Absolute density (20°C):	780 kg/m ³ .
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 ₃ .
	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 hazard information.
Autoignition temperature:	Does not apply.
Decomposition temperature:	>80°C would affect the technical characteristics of the formulated product.
Evaporation rate:	Does not apply.
Goo:	Does not apply.
Explosive properties:	Not 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:	Does not occur.
Conditions to avoid:	Humidity and high temperatures
Incompatible materials:	Incompatibility for applications with joints with cupric compounds and antibiotics. Do not mix Nacillus® with other pesticides without first performing a compatibility test. Check compatibility list with the manufacturer.

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Hazardous decomposition products:	It does not generate toxic combustion and decomposition products, only CO2.
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SECTION 11: Toxicological Information.

Acute Toxicity: No known reports of adverse effects on human health.

Acute Oral Toxicity:	LD 50 : >5000 mg/kg. WHO Classification: Category IV “Products that normally do not present danger.”
Acute Dermal Toxicity:	LD 50 : > 2000 g/kg.
Acute Inhalation Toxicity:	LC 50 : > 5 mg/L.
Skin Irritation/Corrosion:	slight skin irritation.
Serious eye damage/eye irritation:	No corneal opacity; irritation reversible in 7 days. Irritant to the eyes.
Respiratory or skin sensitization:	Possible sensitizer.

Subchronic and Chronic Toxicity:

Subchronic and chronic toxicity is not required because survival, replication, infectivity, toxicity, or persistence of the microbial agents is not observed in the treated test animals in the acute oral infectivity test.

Mutagenicity of reproductive cells:

Bacillus subtilis Antumávida strain:	Does not apply. None of the strains involved in the commercial formulation present toxic effects in the acute toxicity tests, it was not necessary to carry out mutagenicity tests, since the strains of the NACILLUS product separately or the mixture of these in the formulation do not generate toxic effects in the human or animal health.
Bacillus subtilis strain Vilcún:	
Bacillus licheniformis Mallerauco strain:	
Brevibacillus brevis Maguellines strain:	
Brevibacillus brevis strain Maguellines I:	

Carcinogenicity:

Bacillus subtilis Antumávida strain:	Does not apply. None of the strains involved in the commercial formulation present toxic effects in the acute toxicity tests; it was not necessary to carry out Carcinogenicity tests, since the strains of the NACILLUS® product (WP) separately or the mixture of these in the formulation do not generate toxic effects on human or animal health.
Bacillus subtilis strain Vilcún:	
Bacillus licheniformis Mallerauco strain:	
Brevibacillus brevis Maguellines strain:	
Brevibacillus brevis strain Maguellines I:	

Reproductive Toxicity:

Bacillus subtilis Antumávida strain:	Does not apply. None of the strains involved in the commercial formulation present toxic effects in the acute toxicity tests; it was not necessary to carry out Reproduction tests since the strains of the NACILLUS® (WP) product separately or the mixture of these in the formulation do not generate effects. toxic to human or animal health.
Bacillus subtilis strain Vilcún:	
Bacillus licheniformis Mallerauco strain:	
Brevibacillus brevis Maguellines strain:	
Brevibacillus brevis strain Maguellines I:	

Specific target organ toxicity – single exposure:

There is no known damage caused to the body (body and different organs) of humans and mammals:

Bacillus subtilis Antumávida strain:	According to the available data (Based on the results of acute toxicity analyses, which classified the active ingredients (<i>Bacillus subtilis</i> strain
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Bacillus subtilis strain Vilcún:	Antumávida , <i>Bacillus subtilis</i> strain Vilcún , <i>Bacillus licheniformis</i> strain Mallerauco , <i>Brevibacillus brevis</i> strain Maguellines and <i>Brevibacillus brevis</i> strain Maguellines I) as non-toxic and long-term, chronic, subchronic reproductive or other studies are not required) the classification criteria are not met.
Bacillus licheniformis Mallerauco strain:	
Brevibacillus brevis Maguellines strain:	
Brevibacillus brevis strain Maguellines I:	

Specific target organ toxicity – repeated exposure:

There is no known damage caused to the body (body and different organs) of humans and mammals:

Bacillus subtilis Antumávida strain:	According to the available data (Based on the results of acute toxicity analyses, which classified the active ingredients (<i>Bacillus subtilis</i> strain Antumávida , <i>Bacillus subtilis</i> strain Vilcún , <i>Bacillus licheniformis</i> strain Mallerauco , <i>Brevibacillus brevis</i> strain Maguellines and <i>Brevibacillus brevis</i> strain Maguellines I) as non-toxic and long-term, chronic, subchronic reproductive or other studies are not required) the classification criteria are not met.
Bacillus subtilis strain Vilcún:	
Bacillus licheniformis Mallerauco strain:	
Brevibacillus brevis Maguellines strain:	
Brevibacillus brevis strain Maguellines I:	

Aspiration Hazard:

It is not dangerous through this route of exposure.

Possible routes of exposure:

Oral, dermal, ocular and inhalation, therefore avoid contact.

Symptoms related to physical, chemical and toxicological characteristics:

Anticipated acute effects: No acute effects in testing. In susceptible people, they may present: Diarrhea, cough, difficulty breathing, itchy nose, irritation, rarely causes gastroenteritis. Most important symptoms/effects: In immunocompromised patients or recent trauma. Prolonged and severe neutropenia, mucosal barrier damage and transplantation.

Other relevant information on harmful health effects:

Toxicokinetics: Toxicological data demonstrated that *Bacillus subtilis* strain Antumávida, *Bacillus subtilis* strain Vilcún, *Bacillus licheniformis* strain Mallerauco, *Brevibacillus brevis* strain Maguellines and *Brevibacillus brevis* strain Maguellines I are not toxic, infectious or pathogenic for mammals. No risks were identified from acute, subchronic, chronic, immune or endocrine exposures. It is also not expected that dietary exposure through drinking water could cause harm to populations, because it is not known to grow or thrive in aquatic environments, nor is it expected to survive in drinking water treatment. These species are widely distributed in nature. Exposure and risk to workers is likely to be minimal or negligible.

Absorption:	There is no history of absorption through the dermal and oral routes.
Metabolism:	The metabolic pathways of these strains have not been characterized in detail. The metabolic models reflect the nutritional adaptation of these strains to various niches in nature. Toxicological data demonstrated that the strains are not toxic, infectious or pathogenic to mammals.
Distribution:	There are no antecedents.
Excretion:	There are no antecedents.

Pathogenicity and acute infectiousness (oral, dermal and inhalation): It is neither pathogenic nor infectious.

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<p>Endocrine disruption: This product is unlikely to have estrogenic or endocrine effects because the strains are virtually nontoxic to mammals. Neurotoxicity: It is not a neurotoxic product. Immunotoxicity: Does not affect the immune system.</p>
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SECTION 12: Ecological information	
Ecotoxicity (EC, IC and LC): No known reports of adverse effects to the environment .	
Aquatic organisms:	
Fish:	The product is not expected to be toxic or pathogenic or infectious to fish.
<i>Daphnia magna</i>:	The product is not expected to be toxic or pathogenic or infectious to freshwater invertebrates.
Algae:	No pathogenicity, phytotoxicity or any other adverse effect on plants has been indicated.
Terrestrial organisms:	
Terrestrial plants:	It is not expected to be toxic, pathogenic or infectious to terrestrial plants.
Birds:	The product is not expected to be toxic or pathogenic or infectious to birds.
Bees:	The product is not expected to be toxic or pathogenic or infectious to bees.
Arthropods other than bees:	The product is not expected to be toxic or pathogenic or infectious.
Non-target soil worms or microorganisms:	No adverse effects.
Persistence and degradability:	
Floor:	
<i>Bacillus subtilis</i> Antumávida strain:	These 5 species live in the upper layer of soils, rich in organic matter. This is in accordance 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.
<i>Bacillus subtilis</i> strain Vilcún:	
<i>Bacillus licheniformis</i> Mallerauco strain:	
<i>Brevibacillus brevis</i> Maguellines strain:	
<i>Brevibacillus brevis</i> strain Maguellines I:	
Water:	
<i>Bacillus subtilis</i> Antumávida strain:	These 5 species within soil are unlikely to leach into water due to greatly reduced survival rates with increasing soil depths, as population growth and germination would stop due to nutrient depletion, so which there is no risk of filtration into the water. Even if oral exposure were to occur through drinking water, it is concluded that there is reasonable certainty that no harm will result from exposure to residues of these 5 species in all anticipated drinking water exposures due to lack of toxicity/ Acute oral pathogenicity to mammals.
<i>Bacillus subtilis</i> strain Vilcún:	
<i>Bacillus licheniformis</i> Mallerauco strain:	
<i>Brevibacillus brevis</i> Maguellines strain:	
<i>Brevibacillus brevis</i> strain Maguellines I:	
Air:	
<i>Bacillus subtilis</i> Antumávida strain:	These 5 species are not expected to be predominant in this environmental behavior, because: Product survival during aerosolization is usually limited due to stresses such as shear forces, desiccation, temperature, and UV light exposure. These species occur in the air naturally at low frequency and low concentration.
<i>Bacillus subtilis</i> strain Vilcún:	
<i>Bacillus licheniformis</i> Mallerauco strain:	

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<i>Brevibacillus brevis</i> Maguellines strain:	
<i>Brevibacillus brevis</i> strain Maguellines I:	
Bioaccumulative potential: No cumulative effects are anticipated.	
Mobility on the ground:	
<i>Bacillus subtilis</i> Antumávida strain:	These 5 species are considered to live in the upper layer of soils, rich in organic matter. There is no risk of uncontrolled growth since population growth and germination would stop due to nutrient depletion.
<i>Bacillus subtilis</i> strain Vilcún:	
<i>Bacillus licheniformis</i> Mallerauco strain:	
<i>Brevibacillus brevis</i> Maguellines strain:	
<i>Brevibacillus brevis</i> strain Maguellines I:	

SECTION 13: Information on the final disposition.

Residues/remnants/waste:	Controlled incineration in ovens at high temperatures > 1000°C with combustion and destruction efficiency: 99.9% and/or arranged if current national or local legislation allows it. In the event of pesticide spills or waste, collect them with sawdust or absorbent material, collect them in an airtight container, and dispose of them in a landfill authorized by the regulatory entity.
Contaminated container and packaging:	<p>“THE USE OF CONTAINERS OR PACKAGING IN A DIFFERENT WAY FROM WHAT THEY WERE DESIGNED FOR, PUT HUMAN HEALTH AND THE ENVIRONMENT IN DANGER.”</p> <p>Container: Dispose of the container in a clearly identified place, until the health authority specifies its final destination.</p> <p>Contaminated packaging: Dispose of the packaging/packaging in a clearly identified place, until the health authority specifies its final destination. Uncontaminated packaging may be recycled.</p>
Prohibition of discharge into wastewater:	The discharge of untreated wastewater into wastewater bodies is prohibited. RIVERS, LAKES, PONDS AND SOURCES OF GROUND AND SURFACE WATER.
Other special precautions	<p>Contaminated material: The contaminated material will be transferred to properly labeled containers for subsequent disposal in facilities approved by the health and environmental authority.</p> <p>Cleaning and decontamination procedures for application equipment and contaminated areas: The equipment (interior and exterior) that contained the product must be cleaned with water (triple rinse) and the water from the rinses will be applied to the object of application. In contaminated areas, collect the material with normal means, transfer it to a properly identified container and send it to a facility authorized for this type of waste.</p>

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SECTION 14: Transportation Information.

Regulations	Transport mode		
	Land ADR/RID	Maritime IMDG	Air IATA
UN number:	Goods not dangerous for transport.	Goods not dangerous for transport.	Goods not dangerous for transport.
Official shipping name:	Does not apply.	Does not apply.	Does not apply.
Class or division:	Does not apply.	Does not apply.	Does not apply.
UN Secondary Hazard:	Does not apply.	Does not apply.	Does not apply.
Packing group:	Does not apply.	Does not apply.	Does not apply.
Hazard identification badge according to NCh 2190:	Does not apply.	Does not apply.	Does not apply.
Environmental hazards:	No environmental hazards are generated.	No environmental hazards are generated.	No environmental hazards are generated.
Transport in bulk (MARPOL 972 73/78-Annex II-; IBC Code):	There are no special precautions.	There are no special precautions.	There are no special precautions.

General precautions:

- Transport pallets.
- Do not transport with food, plant products or any others that are intended for human or animal use or consumption.
- Do not transport with flammable or explosive elements.
- The transporter must always have the safety sheet at hand.

SECTION 15: Current Rules.

National:

NCh No. 382 in force:	Hazardous substances - Terminology and general classification.
NCh No. 2190 in force:	Land transportation of dangerous goods - Badges for hazard identification.
NCh No. 2245 in force:	Safety data sheet for chemicals - Content and order of sections.
NCh No. 2979 in force:	Hazardous Substances - Segregation and packaging in land transport.
NCh N°1411/4 in force:	Risk prevention – Part 4: identification of material risks.
DS No. 298 in force:	Regulations for the Transportation of Dangerous Substances on streets and roads.
DS No. 148 in force:	Health Regulations on Hazardous Waste Management.
DS No. 594 in force:	Regulation on basic sanitary and environmental conditions in workplaces.
DS No. 43 in force:	Regulations for the Storage of Hazardous Substances.
Resolution No. 408 Exempt:	List of Substances Hazardous to Health.

International:

SGA (2019 rev8):	Globally Harmonized System of Classification and Labeling of Chemical Products.
NFPA 704:	Standard System for Hazard Identification of Materials for Emergency Response, 2017.
REACH:	Regulation of registration, evaluation, authorization and restriction of chemical substances.

The recipient should verify the possible existence of local regulations applicable to the product.

SECTION 16: Other information.

Biological properties of the Microorganisms *Bacillus subtilis* strain Antumávida , *Bacillus subtilis* strain Vilcún , *Bacillus licheniformis* strain Mallerauco , *Brevibacillus brevis* strain Maguellines and *Brevibacillus brevis* strain Maguellines I:

***Bacillus subtilis* strain Antumávida , *Bacillus subtilis* strain Vilcún , *Bacillus licheniformis* strain Mallerauco , *Brevibacillus brevis* strain Maguellines and *Brevibacillus brevis* strain Maguellines I present bactericidal action through competition, predation of phytopathogenic bacteria and antibiosis.**

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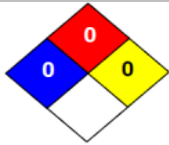
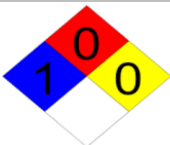
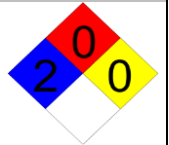
To apply the product, the instructions on the label must be strictly followed and safety elements must always be used.

Change control:	Update to NCh 2245 year 2021.
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Abbreviations and acronyms:

CAS:	Unique numerical identification for chemical compounds, polymers, biological sequences, preparations and alloys.
LD50:	Lethal dose, 50%.
CL50:	Lethal concentration, 50%.
IATA:	International Air Transport Association.
IMDG:	International Maritime Dangerous Goods Code.
ADR:	European agreement relating to the international transport of dangerous goods by road.
ECHA:	European Agency for Chemical Substances and Mixtures.
EPA:	United States Environmental Protection Agency.
OSHA:	Occupational Safety and Health Administration.
NFPA:	National Fire Protection Association.
NCh:	Chilean Standard.
HDS:	Safety sheet.
D.S.	Supreme decret.
BCF:	Bioconcentration factor in fish.
DOT:	Department of Transportation.
NIOSH:	National Institute for Occupational Safety and Health.
FAO:	Food and Agriculture Organization of the United Nations.
WILDEBEEST:	United Nations (UN) number corresponds to a 4-digit serial number assigned to a hazardous substance in the United Nations system.
References:	Material Safety Data Sheets, EPA, ECHA, FAO, OSHA, ACGIH, DOT, NIOSH, NFPA.

Safety sign (NCh1411/4):

		
Orally: Blue: 0 Minimal Risk.	Dermal route: Blue: 1 Minimal Risk.	Via Inhalation: Blue: 2 Moderate risk

Current review date:	01/20/2022.
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Referenced hazard warnings:

ATTENTION.



Classification according to GHS/GHS:

Exposure route	Hazard category	Hazard statement:	Warn wor
Oral:	Unrated.	-	-
Dermal:	Category 5.	H313: May be harmful in case of contact with skin.	Attent
Inhalation:	Unrated.	-	-
Dermal irritation:	Category 3.	H316: Causes mild skin irritation.	Attent
Eye irritation:	Classification 2B.	H320: Causes eye irritation.	Attent



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Sensitization:	Category 1B	H317: May cause an allergic skin reaction.	Attention.
Acute aquatic fish and aquatic invertebrates:	The product is not expected to be toxic or pathogenic or infectious to aquatic organisms.		
Creation date:	01/10/2008.		
Next review date:	11/04/2022.		
Supplier Liability Limit:	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 cause harm to people, private property and/or environment. It is advisable to read this document carefully and contact an expert to guide you if you require assistance.		

The data contained in this information sheet was obtained from reliable sources. The options expressed in this Safety Sheet are those of trained professionals. The information provided in it is what 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 does not assume any responsibility for this concept. Determining the conditions of safe use of the product is the user's obligation.