

## 1. Identification

Product identifier:	RhizoVital <sup>®</sup> 42	
Synonyms:	<i>Bacillus amyloliquefaciens</i> strain FZB42 (active ingredient) AmyProtec <sup>®</sup> 42 (brand name of an identical product)	
Company product code or Supplier code:	N/A	
Fertiliser Group:	2	
RSA Reg. No. (Act No. 36 of 1947):	B4201	
Supplier:	Andermatt Madumbi (Pty) Ltd Suite 105, 24 Hilton Ave, Hilton KZN 3245, South Africa Telephone: +27 (0) 33 342 3984 (09:00 to 16:00) Email address (technical): support@andermatt.co.za	
Recommended use:	Fertiliser (soil improver/soil enhancer)	
Restrictions on use:	Do not use for any other purpose than described on the product label	
Emergency numbers:	+27 (0) 33 342 3984 +27 (0) 82 446 8946	(09:00 to 16:00) (24 H)

## 2. Hazards identification

RhizoVital<sup>®</sup> is a liquid mixture.

Classification: Not classified                      No hazard statement                      No signal word

Additional hazard information: CAUTION: Contains *Bacillus velezensis* FZB42.  
Microorganisms may have the potential to provoke sensitising reactions.

No hazard symbol required

Precautionary statements:

Wear protective gloves/protective clothing/eye protection.	P280
In case of inadequate ventilation, wear respiratory protection.	P284
Do not eat, drink, or smoke when using this product.	P270
Wash hands and face thoroughly after handling.	P264
Avoid breathing mist or spray.	P261
IF ON SKIN: Wash with plenty of water.	P302+P352
Take off contaminated clothing and wash it before reuse.	P362+P364
If skin irritation or rash occurs: Get medical help.	P332+P317
IF INHALED: Remove person to fresh air and keep comfortable for breathing.	P304+P340
Get medical help if you feel unwell.	P319
Contaminated work clothing should not be allowed out of the workplace.	P272
Dispose of contents and/or container in accordance with regulations.	P501

### 3. Composition/information on ingredients

Ingredient	CAS number	%
<i>Bacillus amyloliquefaciens</i> FZB42	Not assigned	$> 5 \times 10^{12}$ spores/100 g
Biomass from the fermentation process	Not applicable	ca 50
Non-hazardous co-formulants	Not applicable	ca 50

### 4. First aid measures

Eye contact:	Most important acute symptoms/effects: eye irritation or redness may occur. IF IN THE 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 help.
Skin contact:	Most important acute symptoms/effects: skin irritation, redness or rash may occur. IF ON SKIN: Wash with plenty of water. Soap may be used. Take off contaminated clothing and wash it before reuse. If skin irritation or rash occurs, get medical help.
Inhalation:	Most important acute symptoms/effects: irritation of the upper airway and coughing may occur. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Get medical help if the person feels unwell.
Ingestion:	Most important acute symptoms/effects: no symptoms or effects are known. IF SWALLOWED: Rinse mouth with water for several minutes. Get medical help if you feel unwell.
Most important delayed symptoms/effects after exposure:	Microorganisms may have the potential to provoke sensitising reactions, especially if there is prolonged or frequently repeated skin contact or inhalation.
Indication of immediate medical attention:	If skin irritation or rash occurs, or if eye irritation persists, or if a burning sensation in the upper airways persists, or if other health disorders appear, get medical help. Treat symptomatically. Pre-existing conditions may be aggravated, such as eye, skin, or respiratory disorders.
Protection of first responders:	Avoid undue contact with the mixture. Wear gloves and a mask to prevent transmission of pathogens.

## 5. Firefighting measures

- Appropriate/suitable extinguishing media: Water spray, foam, carbon dioxide (CO<sub>2</sub>) or dry powder may be used but select extinguishing media that is appropriate for local circumstances and the surroundings.
- Inappropriate extinguishing media: None known.
- Nature of hazardous combustion products: May form explosive mixtures with air on intense heating due to the presence of propylene glycol. Development of hazardous combustion gases or vapours is possible in the event of fire.
- Other hazards arising from the mixture: None known when properly stored and handled. Propane-1,2-diol (propylene glycol) is present in the product at a concentration of 20%, has a flashpoint of 104 °C closed cup, and a boiling point of 187 °C. It may catch fire.
- Special protective equipment: Avoid breathing vapours and combustion by-products that may be emitted. Use self-contained breathing apparatus and complete protective clothing. Do not attempt to act without suitable protective equipment.
- Precautions and/or protective actions: Move containers from the fire area if it can be done without risk. Use water spray to cool down closed containers, but only after considering other material in the vicinity that may pose a hazard. Stay upwind and keep out of low areas. Take precautions to prevent extinguishing media contaminating surface water or ground water.

## 6. Accidental release measures

Distinguish between large or small spills or releases.

- Personal precautions: Avoid contact with skin and eyes. Wash hands thoroughly after handling. Do not eat, drink, or smoke during clean-up operations.
- Protective equipment: Wear protective gloves/protective clothing/eye protection.
- Emergency actions and procedures: No special emergency actions or procedures are required.
- Environmental precautions: The product is for terrestrial use only. Do not apply directly to areas where surface water is present, or to intertidal areas below the high-water mark. Do not contaminate surface or ground water when disposing of rinsate or water used to wash equipment. Avoid release of spills to the environment. Prevent spills from entering storm sewers or drains. Report a large release to the appropriate authorities.

Methods and materials for containment and cleaning up:

Move intact containers from the spill area. The product is a water miscible liquid. Stop leaks if it can be done safely and prevent run-off as far as possible.

Small spills: Dilute spills with water containing a disinfectant and mop up. Place in an appropriate waste disposal container

Large spills: Ensure adequate ventilation. If possible, neutralise the micro-organism with disinfectant. Prevent entry into sewers, water courses, basements, or confined areas by diking if possible. Wash the spillage into an effluent treatment plant. Alternatively contain and collect the spillage by mopping up and transfer to containers for disposal. Flush the area with water if appropriate

Dispose of via a licensed waste disposal contractor.

## 7. Handling and storage

Precautions for safe handling: Wear protective gloves/protective clothing/eye protection, such as nitrile rubber gloves, safety glasses, and long-sleeved clothing. Ensure that open wounds are covered.  
Do not eat, drink, or smoke when using this product.  
Wash hands and face thoroughly after handling.

Conditions for safe storage: Store in the original container in a cool (10 to 25 °C) area out of direct sunlight. Avoid elevated temperatures.  
Keep containers closed. Prevent freezing.  
Store in a facility designed to contain liquid spills.  
Store separately from any food, feed, or drinks.  
Keep out of reach of children and uninformed persons.



Any incompatibilities: The product is sensitive to ultraviolet rays. It is also pH sensitive. Ensure that the pH of the water in a mixing vessel is between 5 and 8 before adding the product.

## 8. Exposure controls/personal protection

No occupational exposure limit values have been established for this mixture.

No biological limit values are available for this mixture.

Appropriate engineering controls include good general ventilation. No other control parameters are considered necessary. Safety showers and eye wash stations should be provided.

Microorganisms may have the potential to provoke sensitising reactions. The product should not be used by subjects affected by immunodeficiency or in treatment with immunosuppressive agents.

Microbial pest control products may cause irritation if inhaled and may cause skin and eye irritation. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. These reactions can be avoided if exposure is minimized or limited by following label recommendation and precautions.

Users must wear a long-sleeved shirt, long pants, shoes plus socks, water-proof gloves and eye goggles or face mask when handling these mixtures. If dust or mist is present, a dust/mist filtering respirator should be used.



## 9. Physical and chemical properties

Physical state	Soluble liquid
Clarity:	Not available
Colour:	Beige to brown
Odour:	Earthy
Odour threshold:	Not determined
Melting point/freezing point:	Not determined
Boiling point (or initial point and range):	Not determined
Flammability (gases, liquids, solids):	Not determined
Lower and upper explosion limits:	Not applicable
Lower and upper flammability limits:	Not applicable
Flash point:	Not determined
Autoignition temperature:	Not determined
Decomposition temperature:	Not determined
pH, neat:	5.5 to 5.8
pH, aqueous dilution	Not determined
Dissociation in water, pKa:	Not determined
Kinematic viscosity (of liquids) in mm <sup>2</sup> /s:	10 to 40
Solubility in water:	Dissolves in water
Solubility in a specified non-polar solvent:	Not determined
Partition coefficient (n-octanol/water):	Not determined
Vapour pressure (at 25 °C):	Not determined
Density and/or relative density:	ca 1.03 g/ml
Relative vapour density:	Not determined
Particle characteristics:	Not applicable
Evaporation rate:	Not determined

## 10. Stability and reactivity

Chemical stability:	The mixture is chemically stable and not reactive when handled or stored at ambient temperatures and below.
Safety significance of any change in physical appearance:	The mixture is not expected to change in physical appearance over time.
Possibility of hazardous reactions:	No known hazardous reactions and no polymerisation.
Conditions to avoid:	Avoid excessive heat. Pressure, shock, static discharge, and vibrations have no known effect.
Incompatible materials:	No known hazardous incompatibilities.
Hazardous decomposition products:	The mixture is not expected to produce hazardous decomposition products when used and stored properly.

## 11. Toxicological information

The active ingredient is not toxic, pathogenic, or infective to humans via any route of exposure. No hazard has been classified for any of the ingredients. No hazard is classified for the end-use product.

Symptoms related to the physical, chemical, and toxicological characteristics of the mixture include possible irritation and redness upon skin contact. Eye contact may cause irritation.

Effects of exposure: Apart from irritation, no data on immediate, delayed, or chronic effects from short- or long-term exposure is available. Prolonged or frequently repeated skin contact or inhalation may cause allergic reactions.

## 12. Ecological information

The product is not expected to cause unreasonable adverse effects to nontarget organisms when used in accordance with the directions on the labels, and in accordance with good agricultural practices.

No adverse effects of the active ingredient were observed in studies of fish, aquatic arthropods, aquatic plants, birds, earthworms, soil microorganisms, or horticultural crops.

Hazards to the aquatic environment are not classified for this product.

Nevertheless, the product must not be applied directly to areas where surface water is present, or to intertidal areas below the high-water mark. Contamination of surface or ground water and entering storm sewers or drains must be prevented.

### 13. Disposal considerations

Avoid release to the aquatic environment. Dispose of waste residues responsibly as low-hazard chemical waste through a licensed waste removal company.

Dispose of the container by rinsing it properly. Do not re-use. Destroy mechanically and dispose of as ordinary waste through a licensed waste removal company.

Refer to the manufacturer or supplier for information on recovery or recycling, for options on reclamation, and on disposal of unused material.

The physical/chemical properties of the product should have no significant effect on disposal procedures.

No special precautions for incineration are required.

There are no special precautions for landfill. The active ingredient occurs naturally and is of no environmental concern.

There is no other relevant information.

### 14. Transport information

UN number: Not classified as dangerous in the context of transport regulations.

UN proper shipping name: Not applicable.

UN packing group number: Not applicable.

UN transport hazard class(es): Not applicable.

A known marine pollutant (IMDG Code)? Not a marine pollutant.

A known severe marine pollutant? Not a marine pollutant.

Environmentally hazardous, ADR? Not classified as dangerous in the context of transport regulations.

Environmentally hazardous, RID? Not classified as dangerous in the context of transport regulations.

Environmentally hazardous, ADN? Not classified as dangerous in the context of transport regulations.

Transport in bulk by sea, IMO? Not classified as dangerous in the context of transport regulations.

There are no special precautions which a user needs to be aware of or needs to comply with.

### 15. Regulatory information

Relevant safety regulations: Regulations for hazardous chemical agents 2021, Department of Employment and Labour (March 2021).

Relevant health regulations: Occupational Health and Safety Act, 1993 (Act No. 85 of 1993).

Relevant environmental regulations: The National Environmental Management Act, 107 of 1998 (NEMA). Guidelines on the administration of incidents, as described in section 30 of the NEMA, Department of Environmental Affairs (2019).

Subject to the Montreal Protocol? No.  
Subject to the Stockholm Convention? No.  
Subject to the Rotterdam Convention? No.  
Subject to any prohibitions? No.  
Subject to any restrictions? No.

## 16. Other information

SDS identification or reference number: 027

Date of the previous revision of this SDS: Not dated. Previous revision number: Not numbered.

There is no additional information relevant to the material's nature or use, or any other relevant information.

Abbreviations that may have been used in this document:

AND means European Agreement Concerning the International Carriage of Dangerous Goods by Inland Waterways.

ADR means Agreement Concerning the International Carriage of Dangerous Goods by Road.

bw means body weight.

CAS means Chemical Abstract Service.

Cat. means Category.

CFU means colony forming units.

GHS means Globally Harmonised System of Classification and Labelling of Chemicals.

IMDG Code means International Maritime Dangerous Goods Code.

IMO means International Maritime Organisation.

IRAC MoA means Insecticide Resistance Action Committee Mode of Action (Classification Scheme).

NEMA means National Environmental Management Act.

NOEC means no observed effect concentration.

OB means occlusion body.

RID means Regulations Concerning the International Carriage of Dangerous Goods by Rail.

SDS means safety data sheet.

STOT means specific target organ toxicity.

UN means United Nations.

This safety data sheet was compiled in compliance with the following regulations and guidelines:

- a. Regulations for hazardous chemical agents 2021, Department of Employment and Labour (March 2021).
- b. The globally harmonised system of classification and labelling of chemicals (GHS), 9th Revised Edition, United Nations (2021).
- c. Globally harmonised system of classification and labelling of chemicals (GHS), SANS 10234:2019, Ed. 2.00 (2019).