

SECTION 1: IDENTIFICATION OF THE MIXTURE AND THE COMPANY

1.1 PRODUCT IDENTIFIER

Trade Name	PreFence
Product Type	Wettable Powder (WP)
REACH Registration number	Not applicable to biological products

1.2 RELEVANT IDENTIFIED USES OF THE MIXTURE AND USES ADVISED AGAINST

The uses of the mixture	PreFence is a biofungicide for the control of seed rot, wilt and root diseases, caused by eg. <i>Fusarium</i> , <i>Alternaria</i> , <i>Phytophthora</i> , <i>Rhizoctonia</i> and <i>Pythium</i> , in vegetables, ornamentals, herbs, turfs and tree/forest seedlings. Professional use only.
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1.3 DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET

Supplier	BioWorks, Inc.
Street address	100 Rawson Rd., Ste. 205 Victor, NY 14564
Telephone number	(800) 877-9443
Fax number	(800) 903-2377
Email address	expert@bioworksinc.com

1.4 EMERGENCY TELEPHONE NUMBER

In USA: For emergency/product information call (585) 924-4362, Monday through Friday, 9 a.m. to 5 p.m. After 5 p.m. call your poison control center at (800) 222-1222. For spill, leak, fire, exposure or accident call CHEMTREC at (800) 424-9300 (USA and Canada).

SECTION 2: HAZARDS IDENTIFICATION

2.1 CLASSIFICATION OF THE MIXTURE

In USA: Product is not classified as hazardous and does not contain any substances that are classified as hazardous or dangerous.

2.2 LABEL ELEMENTS / PRECAUTION STATEMENTS

In USA:

Hazards to Humans and Domestic Animals.
 CAUTION: Harmful if inhaled.
 Avoid breathing dust or spray mist.
 Causes moderate eye irritation.
 Avoid contact with skin, eyes or clothing.
 Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet.
 Remove and wash contaminated clothing before reuse.
 Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

Applicators and other handlers must wear: Long-sleeved shirt and long pants. Waterproof gloves. Shoes plus socks. Dust/mist filtering respirator (MSHA/NIOSH approval number prefix TC-21C) or a NIOSH approved respirator with any approval number prefix N-95, R-95 or P-95 or HE filter.

Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high-water mark. Do not contaminate water by disposal of equipment wash waters.

2.3 OTHER SUPPLEMENTAL HAZARD INFORMATION

“PreFence contains *Streptomyces* K61. Micro-organisms may have the potential to provoke sensitizing reactions.”

SECTION 3: HAZARDS IDENTIFICATION

3.1 MIXTURES

Substance name	CAS-, EC- or index number	REACH Registration No.	Concentration	Classification ○ Pictograms ○ H-statements ○ category
Dried spores and mycelium of <i>Streptomyces</i> strain K61	n/a	n/a	1*10 ⁸ cfu/g ⁽¹⁾ of the product (minimum)	None

(1) See section 16 “Abbreviations and acronyms”.

SECTION 4: FIRST AND MEASURES

4.1 PRODUCT IDENTIFIER

If inhaled

Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible.

If in eyes

Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.

If on skin or clothing

Take off contaminated clothing. Immediately rinse skin with plenty of water for 15-20 minutes.

Call a poison control center or doctor for further treatment advice. Have the product container or label with you when calling a poison control center or doctor or going for treatment.

4.2 MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED

Harmful if inhaled. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

4.3 INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED

See section 4.1 for further information.

SECTION 5: FIREFIGHTING MEASURES

5.1 EXTINGUISHING MEDIA

Adequate media:

All common extinguishing media, eg. water and extinguishing foam.

Unsuitable media:

None/unknown.

5.2 SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE

None.

5.3 ADVICE FOR FIREFIGHTERS

Wear fire/flame resistant clothing. Wear respiratory protection (self-contained breathing apparatus).

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES

Applicators and other handlers must wear: Long-sleeved shirt and long pants. Waterproof gloves. Shoes plus socks. Dust/mist filtering respirator (MSHA/NIOSH approval number prefix TC-21C) or a NIOSH approved respirator with any approval number prefix N-95, R-95 or P-95 or HE filter.

Remove personal protection equipment immediately after handling this product. If gloves are worn, wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry. Users should remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

6.2 ENVIRONMENTAL PRECAUTIONS

Avoid release to the environment. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high-water mark. Do not contaminate water by disposal of equipment wash waters.

For spill, leak, fire, exposure or accident call CHEMTREC at 1-800-424-9300 (USA and Canada).

6.3 METHODS AND MATERIAL FOR CONTAINMENT AND CLEANING UP

Do not contaminate water, food or feed by storage or disposal. Dispose of contents and container: in accordance with local and national regulations. See Section 13 for further information on national waste management.

6.4 REFERENCE TO OTHER SECTIONS

For further information regarding personal protection and waste management see Section 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1 PRECAUTIONS FOR SAFE HANDLING

Do not breath dust. Applicators and other handlers must wear: Long-sleeved shirt and long pants. Waterproof gloves. Shoes plus socks. Dust/mist filtering respirator (MSHA/NIOSH approval number prefix TC-21C) or a NIOSH approved respirator with any approval number prefix N-95, R-95 or P-95 or HE filter.

7.2 CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES

Keep out of reach of children. PreFence consists of living microbes packed in moisture and air proof unit packages. Store in a cool (below 46°F, 8°C) dry place. Use all contents in packet the same day. Do not store opened packets since product will lose its activity. See the use before date on the packet.

7.3 SPECIFIC END USE(S)

Identified end uses indicated in section 1. Information of this section 7 should be taken into account.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 CONTROL PARAMETERS

National occupational exposure limit values: None.

Other limit values: None.

DNEL: None.

PNEC: None.

8.2 EXPOSURE CONTROLS

Appropriate engineering controls:

No exposure to the product is to be expected during normal handling when recommended and appropriate protective equipment's are used. Avoid exposure.

Eye / face protection:

Goggles / face shield.

Skin protection:

Protective clothing (protective suit, rubber boots, hat).

Hand protection:

Rubber or plastic gloves (e.g. nitrile gloves).

Respiratory protection:

Dust/mist filtering respirator (MSHA/NIOSH approval number prefix TC-21C) or a NIOSH approved respirator with any approval number prefix N-95, R-95 or P-95 or HE filter.

Thermal hazards:

Environmental exposure controls:

None.

Active microbe is a natural and generally occurring bacteria. No exposure limits.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Yellowish powder
Odour	Odour of soil
Odour threshold	None.
pH	Approx. 7
Melting point/freezing point	Not applicable
Initial boiling point and boiling range	Not applicable
Flash point	Not applicable
Evaporation rate	Not applicable
Flammability (solid, gas)	Not applicable
Upper/lower flammability or explosive limits	Not applicable
Vapour pressure	Not applicable
Vapour density	Not applicable
Relative density	Approx. 200 kg/cu.m.
Solubility(ies)	Insoluble
Partition coefficient: n-octanol/water	Not applicable
Auto-ignition temperature	Not applicable
Decomposition temperature	Not applicable
Viscosity	Not applicable
Explosive properties	Not applicable
Oxidizing properties	Not applicable

SECTION 10: STABILITY AND REACTIVITY

Reactivity:	Product is stable under normal conditions of use, storage and transportation.
Chemical stability:	Product is stable under normal conditions of use, storage and transportation.
Possibility of hazardous reactions:	Product is stable and hazardous reactions do not occur under recommended conditions of use, storage and transportation.
Conditions to avoid:	Avoid high temperatures (>30°C), UV-light and irradiation.
Incompatible materials:	Acids, bases, concentrated fertilizer liquids, chemical pesticides, food, drink and animal feeding stuffs.
Hazardous decomposition products:	Not applicable.

SECTION 11: TOXICOLOGICAL INFORMATION

Acute toxicity:	No toxicity, infectivity or pathogenicity.
Oral:	LD50 (oral, rat) > 5 g/kg. Not toxic, infective or pathogenic to rat.
Dermal/skin contact:	LD50 (dermal, rat) > 5 g/kg. Not toxic, infective or pathogenic to rat.
Inhalation:	Not toxic or pathogenic to rat.
Intraperitoneal:	Not toxic or pathogenic to rat.
Skin corrosion/irritation:	No skin irritation.
Serious eye damage/irritation:	None. Mild eye irritation (reversible within 2 days).
Respiratory or skin sensitization:	May have the potential to provoke sensitizing reactions.
Germ cell mutagenicity:	No data available. No recognized mutagenicity.
Carcinogenicity:	No data available. No recognized carcinogenicity.
Reproductivity toxicity:	No data available.
STOT-single exposure	No data available.
STOT-repeated exposure	No data available.
Aspiration hazard	No data available.
Other information	No further information.

SECTION 12: ECOLOGICAL INFORMATION

12.1 TOXICITY

The product and its components are not classified as ecologically toxic. *Streptomyces* is a natural and generally occurring soil bacteria.

Not toxic or pathogenic to fish, (no-observed-effect level (NOEL) = 5*10⁴ cfu/ml, Rainbow trout).

Not toxic or pathogenic to daphnia, (no-observed-effect level (NOEL) = 1*10⁴ cfu/ml, Daphnia magna).

Not toxic or pathogenic to bird, (LD50 > 2500 mg/kg Bobwhite quail, Mallard duck).

Not toxic or pathogenic to honeybee (LD50 > 2400 ppm).

Not toxic or pathogenic to earthworm (LC50 > 1000 ppm).

12.2 PERSISTENCE AND DEGRADIBILITY

Degradability expected to be easy, as for other naturally occurring soil microbes.

12.3 BIOACCUMULATIVE POTENTIAL

No expected bioaccumulative potential.

12.4 MOBILITY IN SOIL

Streptomyces ray bacterium is a natural inhabitant in soil.

12.5 RESULTS OF PBT AND vPvB ASSESSMENT

No data available.

12.6 OTHER ADVERSE EFFECTS

No other known adverse effects.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 WASTE TREATMENT METHODS

Dispose of contents and container: in accordance with local and national regulations.

In USA:	Do not contaminate water, food or feed by storage or disposal.
Pesticide Disposal:	Wastes resulting from the use of this product must be disposed of on-site using all the material in this container by application according to label directions or at an approved waste disposal facility.
Container Disposal:	Non-refillable container; do not reuse or refill this container. Completely empty packet into application equipment. Offer container for recycling, if available; otherwise, discard in trash.

SECTION 14: TRANSPORT INFORMATION

Product is not classified as dangerous goods according to international transportation regulations in force ADR, RID, ADN, IATA and AMDG.

Environmental hazards	None
Special precautions for user	None
Transport in bulk according to Annex II of MARPOL73/78 and the IBC code	Product is not intended for bulk transport.

SECTION 15: REGULATORY INFORMATION

15.1 SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS/LEGISLATION SPECIFIC FOR THE SUBSTANCE OR MIXTURE

Safety Data Sheet and Classification in accordance with EPA biopesticide approval of PreFence (EPA Reg. No.: 64137-5-68539).

15.2 CHEMICAL SAFETY ASSESSMENT

Chemical safety assessment of the product and results thereof presented in Section 7 and 8 of this Safety Data Sheet.

Chemical safety assessment related to plant protection products done by EPA. PreFence is authorized as a biopesticide in the U.S. (EPA Reg. No.: 64137-5-68539).

SECTION 16: OTHER INFORMATION

16.1 INDICATION OF CHANGES

Version 2: Revisions and changes made to the general design and content of Safety Data Sheet, to get the U.S. version more in line with the current European SDS requirements for mixtures: CLP Regulation (EC) 1272/2008, Regulation (EU) 453/2010, Directive 1999/45/EC.

16.2 ABBREVIATIONS AND ACRONYMS

Cfu/g Colony forming units per grams.

16.3 KEY LITERATURE REFERENCES AND SOURCES FOR DATA

Regulations, Directives, Acts, databases, literature and own studies.

16.4 USED METHOD IN EVALUATING CLASSIFICATION

The information provided in this Safety Data Sheet is correct to the best of our knowledge at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification, since the conditions of the operations mentioned are beyond our control. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process unless specified in the text. BioWorks, Inc. disclaims any liability for loss or damage resulting from the use of these data, information or suggestions. CLP Regulation (EC) 1272/2008, Regulation (EU) 453/2010 and Directive 1999/45/EC.

LIST OF RELEVANT H- AND P- STATEMENTS OR/AND SAFETY AND OTHER PRECAUTIONARY STATEMENTS

H- and P-statements related to CLP Regulation (EC) 1272/2008 not in use in the U.S.

EPA approved precautionary statements:

Hazards to Humans and Domestic Animals.

CAUTION: Harmful if inhaled.

Avoid breathing dust or spray mist.

Causes moderate eye irritation.

Avoid contact with skin, eyes or clothing.

Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet.

Remove and wash contaminated clothing before reuse.

Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

Applicators and other handlers must wear: Long-sleeved shirt and long pants. Waterproof gloves. Shoes plus socks. Dust/mist filtering respirator (MSHA/NIOSH approval number prefix TC-21C) or a NIOSH approved respirator with any approval number prefix N-95, R-95 or P-95 or HE filter.

Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high-water mark. Do not contaminate water by disposal of equipment wash waters.

If inhaled

Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible.

If in eyes

Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.

If on skin or clothing

Take off contaminated clothing. Immediately rinse skin with plenty of water for 15-20 minutes.

Call a poison control center or doctor for further treatment advice. Have the product container or label with you when calling a poison control center or doctor or going for treatment.

TRAINING ADVICE FOR WORKERS

To avoid risks to human health and the environment, comply with the instructions for use.