

Production date: 06.05.2013
Revision: 19.07.2017
Trade name: Botector®

1 IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY

1.1 Product identifier

Trade name: Botector®
CAS-No.: not applicable
Registration No.: 31248

1.2 Relevant identified uses of the substance or mixture and uses advised against

Biological fungicide for the suppression of grey mold (*Botrytis cinerea*) in grapes, berries, fruiting and leafy vegetables and ornamentals and for the suppression of anthracnose fruit rot (*Colletotrichum acutatum*) and partial suppression of phomopsis leaf blight (*Phomopsis obscurans*) in berries.

1.3 Details of the supplier of the safety data sheet

Supplier: bio-ferm, Biotechnologische Entwicklung und Produktion GmbH
Address: Technopark 1
A - 3430 Tulln
Country: Austria

Information contact:

Company: bio-ferm Biotechnologische Entwicklung und Produktion GmbH
Phone: +43 (0) 2272 660896-0
Fax: +43 (0) 2272 660896-11
Email: office@bio-ferm.com

1.4 Emergency telephone number:

Call emergency hotline CHEMTREC 1-800-424-9300.

2 HAZARDS IDENTIFICATION

2.1 Classification of the mixture:

The classification complies with actual legally binding EU Directives and is supplemented by company and literature data.

2.2 Label elements

Hazard determining component for labelling:

Aureobasidium pullulans DSM 14940
Aureobasidium pullulans DSM 14941

KEEP OUT OF REACH OF CHILDREN
READ THE LABEL BEFORE USING
CAUTION: POTENTIAL SENSITIZER

2.3 Other hazards

Contains *Aureobasidium pullulans* DSM 14940 and DSM 14941. May produce an allergic reaction.
The substances contained in the product are not classified as PBT- or vPvB-substance.

Production date: 06.05.2013
Revision: 19.07.2017
Trade name: Botector®

3 COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

This product is a mixture.

3.2 Mixtures

Substance name: *Aureobasidium pullulans* DSM 14940
CAS-No.: 67891-88-7
Concentration: 50%

Substance name: *Aureobasidium pullulans* DSM 14941
CAS-Nr.: 67891-88-7
Concentration: 50%

4 FIRST-AID-MEASURES

4.1 Description of first aid measures

General information:

Remove from source of exposure. No specific treatment after contact with cells of *A. pullulans* is required since no specific clinical symptoms are known to occur. As a general precautionary measure, persons who may want to seek medical advice, should inform the physician about the identity of the fungus on species level, and may show the label of the packing as supporting information. In case of severely immunocompromised persons an antifungal treatment may be chosen despite the lacking infectiveness of this strain.

If swallowed: Call a poison control centre or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control centre or doctor. Do not give anything by mouth to an unconscious person.

If on skin or clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control centre or doctor for treatment advice.

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. Call a poison control centre or doctor for further treatment advice.

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. Call a poison control centre or doctor for treatment advice.

Take container, label or product name and Pest Control Product Registration Number with you when seeking medical attention.

4.2 Most important symptoms and effects, both acute and delayed

Not recorded

4.3 Indication of any immediate medical attention and special treatment needed

Symptomatic treatment. According to the results of a test for minimum inhibitory concentration (MIC) Itraconazole treatment would provide sufficient efficacy against *Aureobasidium pullulans*.

Production date: 06.05.2013
Revision: 19.07.2017
Trade name: Botector®

5 FIRE FIGHTING MEASURES

5.1 Extinguishing media:

Suitable extinguishing media: CO₂, dry chemical powder, foam or water spray

Unsuitable extinguishing media: not recorded

5.2 Special hazards arising from the substance or mixture

Not recorded

5.3 Advice for fire-fighters

Regarding the product no special protective equipment is necessary. Use protective equipment suitable to the situation.

6 ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures:

Please notice instructions for person-related safety precautions and wear protective equipment (see 8).
Avoid formation of dust.

6.2 Environmental precautions:

Do not let enter into drains/surface water bodies/ground water.

6.3 Methods and material for containment and cleaning up:

Collect spilled material with shovel, place into a clean container and cover container loosely. Prevent formation of dust. Place into lockable, labeled salvage container for disposal according to the regulations.

6.4 Reference to other sections:

Protective measures in Section 7 and 8.

7 HANDLING AND STORAGE

7.1 Precautions for safe handling:

Information for safe handling:

Comply with instructions for use. Misuse can lead to injury of health. While handling do not eat, drink or smoke. Prevent formation of dust. Ensure good ventilation/exhaustion at the workplace.

KEEP OUT OF REACH OF CHILDREN. May cause sensitization. Avoid contact with eyes, skin and clothing. Avoid inhaling/breathing mists. Wear waterproof gloves, a long-sleeved shirt, long pants, a NIOSH approved respirator for biological products, and shoes plus socks when handling, mixing/loading or applying the product and during all clean-up and repair activities.

Do not re-enter or allow re-entry into treated areas for 4 hours unless wearing appropriate personal protective equipment, including a long-sleeved shirt, long pants, shoes plus socks, waterproof gloves, and a NIOSH approved respirator for biological products. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash before re-use.

GENERAL: Apply only when the potential for drift to areas of human habitation or areas of human activity such as houses, cottages, schools and recreational areas is minimal. Take into consideration wind speed, wind direction, temperature, application equipment and sprayer settings.

Production date: 06.05.2013
 Revision: 19.07.2017
 Trade name: Botector®

7.2 Conditions for safe storage, including any incompatibilities

Store in a dry area inaccessible to children.

Store in original container only. Keep container closed when not in use.

Store in tightly closed containers in a cool, well ventilated and dry place. Consider expiry date.

To prevent contamination store this product away from food or feed.

Information about storage in one common storage facility

To prevent contamination store this product away from food or feed.

Further information on storage conditions

Keep out of the reach of children and domestic animals.

Storage stability at room temperature ($\leq 20^{\circ}\text{C}$): 18 months from date of manufacture
Storage stability at cold storage ($\leq 8^{\circ}\text{C}$): 24 months from date of manufacture

7.3 Specific end uses

Biological fungicide for the suppression of grey mold (*Botrytis cinerea*) in grapes, berries, fruiting and leafy vegetables and ornamentals and for the suppression of anthracnose fruit rot (*Colletotrichum acutatum*) and partial suppression of phomopsis leaf blight (*Phomopsis obscurans*) in berries.

8 EXPOSURE CONTROL/PERSONAL PROTECTION

8.1 Control parameters

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

8.2 Exposure controls

8.2.1 Appropriate engineering controls

If ventilation on working space is insufficient an exhaustor should be installed.

8.2.2 Personal protective equipment

Hand protection Water-proof gloves.

Respiratory protection In case of extensive formation of dust a NIOSH approved respirator for biological products is recommended.

Skin and body protection Protective work clothing (Wear a long-sleeved shirt, long pants and shoes plus socks). Re-entry before 4 hours must wear long-sleeved shirt, long pants, shoes plus socks, waterproof gloves and a NIOSH approved respirator for biological products.

General protective and hygienic measures:

The usual precautionary measures are to be adhered to when handling chemicals.

Avoid unnecessary contact with the product. Do not eat, drink or smoke at workplace and keep it tidy.

Immediately remove all soiled and contaminated clothing. Wash hands before break and at the end of work. Avoid contact with eyes and skin. Do not inhale dust/smoke/mist.

Production date: 06.05.2013
 Revision: 19.07.2017
 Trade name: Botector®

8.2.3 Environmental exposure control

As this product is not registered for the control of pests in aquatic systems, DO NOT use to control aquatic pests.

DO NOT contaminate irrigation or drinking water supplies or aquatic habitats by cleaning of equipment or disposal of wastes.

DO NOT allow effluent or runoff from greenhouses containing this product to enter lakes, streams, ponds or other waters. For guidance contact the Provincial Regulatory Agency.

DO NOT apply by air.

The spray solution should be used within 8 hours of being prepared.

To reduce runoff from treated areas into aquatic habitats avoid application to areas with moderate to steep slope, compacted soil or clay.

Avoid application when heavy rain is forecast.

Contamination of aquatic areas as result of runoff may be reduced by including a vegetative strip between the treated area and the edge of the water body.

9 PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical state:	Granule
Colour:	Off-white to light pink
Odour:	similar to bread
Melting point/range (°C):	Not applicable.
Boiling point/range (°C):	Not applicable.
Flash point (°C):	Not applicable.
Ignition temperature (°C):	Product is not flammable. (EEC A.10)
Danger of explosion:	Product does not present an explosion hazard. (EEC A.14)
Solubility in/ Miscibility with water:	Dispersible.
pH-Wert (10g/l) at 20°C:	5 - 7

9.2 Other safety information

No further physical-chemical data were produced.

10 STABILITY AND REACTIVITY

10.1 Reactivity

Not determined

10.2 Chemical stability

The product is stable at room temperature (20°C) for 18 months and at cool storage (8°C) for 24 months.

10.3 Possibility of hazardous reactions

No dangerous reactions known if used according to specifications.

10.4 Conditions to avoid

For reasons of storage stability do not expose the product to temperatures above 40°C. Do not store the product above 20°C for a longer period. Keep dry. Consider information on expiry date on the product label!

Production date: 06.05.2013
Revision: 19.07.2017
Trade name: Botector®

10.5 Incompatible materials

Not recorded

10.6 Hazardous decomposition products

No hazardous decomposition products under normal storage conditions known.

11 TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

Oral	LD ₅₀	>2000 mg/kg (Rat)
Dermal	LD ₅₀	>2000 mg/kg (Rat)
Inhalative	LC ₅₀ /4h	>5.18 mg/l (Rat)

Primary irritant effect

On the skin: Not irritating (rabbit, OECD 404)

On the eye: Not irritating (rabbit, OECD 405)

Corrosive effect

No further relevant information available

Sensitization

May cause sensitization by skin contact (guinea-pig, OECD 406)

Toxicity at frequent applications

No further relevant information available

Carcinogenicity

No further relevant information available

Mutagenicity

The strain DSM 14941 did not show mutagen characteristics in the Micronucleus Test in erythrocytes of mammals (EC B12).

Reproductive toxicity

No further relevant information available

Additional toxicological information

The strain DSM 14941 did not show infectivity in an oral (OPPTS 885.3050), inhalative (885.3150) and subcutaneous test (OPPTS 885.3200) on infectivity.

Production date: 06.05.2013
Revision: 19.07.2017
Trade name: Botector®

12 ECOLOGICAL INFORMATION

12.1 Toxicity

Aquatic toxicity

EC₅₀/48h >200 mg/l (Water flea (*Daphnia magna*))
EC/LC₅₀/21d >200 mg/l (Water flea (*Daphnia magna*))
EC₅₀/7d >100 mg/l (Water lense (*Lemna minor*))
EC₅₀/7d >250 mg/l (Water lense (*Lemna gibba*))
EC₅₀/72h >100 mg/l (Algae (*Pseudokirchneriella subcapitata*))
EC₅₀/96h >100 mg/l (Rainbow trout (*Oncorhynchus mykiss*))

Effects on earthworms

LC₅₀/14d >1000 mg/kg soil (earthworm (*Dendrobena hortensis*))

Effects on spider mites

A laboratory test with the predatory mite *Typhlodromus pyri* resulted in a LR₅₀ above the maximum application rate.

Effects on birds

LD₅₀/30d >2000 mg/kg-bw*
ID₅₀/30d >2000 mg/kg-bw*

* Data refer to a product which contains the strain *Aureobasidium pullulans* DSM 14941.

Effects on bees

LD₅₀/22d >200 µg/bee
NOEC/22d 200 µg/bee

12.2 Persistence and degradability

Degradation in soil: The product is easily biodegradable.
Not hazardous to water.

12.3 Bioaccumulative potential

No further relevant information available

12.4 Mobility in soil

No further relevant information available

12.5 Results of PBT and vPvB assessment

Not applicable

12.6 Other adverse effects

No further relevant information available

Production date: 06.05.2013
Revision: 19.07.2017
Trade name: Botector®

13 DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

1. Triple- or pressure rinse the empty container. Add the rinsings to the spray mixture in the tank.
2. Follow provincial instruction for any required additional cleaning of the container prior to its disposal.
3. Make the empty container unsuitable for further use.
4. Dispose of the container in accordance with provincial requirements.
5. Dispose unwanted product in accordance with municipal or provincial regulations. For information on disposal of unused, unwanted product, contact the manufacturer or the provincial regulatory agency. Contact the manufacturer and the provincial regulatory agency in case of a spill, and for clean-up of spills.

14 TRANSPORT INFORMATION

14.1 UN-No

Not applicable

14.2 Proper shipping name

Not applicable

14.3 Class(es)

Road-/Rail transport ADR/RID-Class: no dangerous good

Maritime transport IMDG/GGVSee-Class: no dangerous good

Air transport ICAO-TI and IATA-DGR-Class: no dangerous good

14.4 Packing group

Not applicable

14.5 Environmental hazards

Road-/Rail transport ADR/RID-Class: no dangerous good

Maritime transport IMDG/GGVSee-Class: no dangerous good

Air transport ICAO-TI and IATA-DGR-Class: no dangerous good

14.6 Special precautions for user

See Sections 6 to 8

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

The product is sold only in appropriate packaging.

15 REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the mixture

EU regulations

The product is classified according to EC guidelines.

National regulations

The classification is made according to national registration.

15.2 Chemical Safety Assessment

The mixture was not subject to a chemical safety assessment.

Production date: 06.05.2013
Revision: 19.07.2017
Trade name: Botector®

16 OTHER INFORMATION

Further information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Changes to the previous version

Section: 1.2, 7.1, 7.3, This SDS is replacing the SDS from 20.03.2017.