1 IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY

1.1 Product identifier
Trade name: Botector®
CAS-No.: not applicable
Reg.-No.: 60357

1.2 Relevant identified uses of the substance or mixture and uses advised against
Plant protection product to control Botrytis cinerea, the causative organism of grey mold.

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 local emergency information

2 HAZARDS IDENTIFICATION

2.1 Classification of the mixture
Regulation (EC) No 1272/2008:
ΚΙΝΔΥΝΟΣ EUH208.

2.2 Label elements
Regulation (EC) No 1272/2008:

ΔΗΛΩΣΕΙΣ ΕΠΙΚΙΝΔΥΝΟΤΗΤΑΣ:
EUH208.

ΔΗΛΩΣΕΙΣ ΕΠΙΚΙΝΔΥΝΟΤΗΤΑΣ:
P101, P102, P261, P270, P 405, P280, P363, P302+P352, P304+P341, P333+P313, P342+P311
2.3 Other hazards
EUH401., SP1
The substances contained in the product do are not classified as PBT- or vPvB-substance.

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%
Classification acc. to Regulation (EC) No 1272/2008:

<table>
<thead>
<tr>
<th>Classification acc. to Regulation (EC) No 1272/2008:</th>
</tr>
</thead>
<tbody>
<tr>
<td>EUH208.</td>
</tr>
</tbody>
</table>

Substance name: *Aureobasidium pullulans* DSM 14941
CAS-Nr.: 67891-88-7
Concentration: 50%
Classification acc. to Regulation (EC) No 1272/2008:

<table>
<thead>
<tr>
<th>Classification acc. to Regulation (EC) No 1272/2008:</th>
</tr>
</thead>
<tbody>
<tr>
<td>EUH208.</td>
</tr>
</tbody>
</table>

Full text of the phrases: see section 16.

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 immunocomprised persons an antifungal treatment may be chosen despite the lacking infectiveness of this strain.

Following inhalation:
Remove from source of exposure. Supply fresh air; consult doctor in case of complaints.

Following skin contact:
Remove contaminated clothes, wash the affected skin with water and soap. If symptoms persist, seek medical advice.
Following eye contact:
Rinse open eyes immediately with plenty of water for at least 10 minutes. If symptoms persist, seek medical advice.

Following ingestion:
Flush with copious amounts of water (only if person is not unconscious). If symptoms of indisposition persist, seek medical advice.

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*.

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 ACCIDENTIAL 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
No special measures required.

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.

7.2 Conditions for safe storage, including any incompatibilities
Store in tightly closed containers in a cool, well ventilated and dry place. Consider expiry date.

Information about storage in one common storage facility
Do not store food, beverages and animal feeding stuffs in the storage area.

Further information on storage conditions
Keep out of the reach of children and domestic animals.

Storage stability at room temperature (≤25°C): 10 months from date of manufacture
Storage stability at cold storage (≤8°C): 18 months from date of manufacture

7.3 Specific end uses
Plant protection product to control Botrytis cinerea, the causative organism of grey mould.

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 exhauster should be installed.

8.2.2 Personal protective equipment
Eye/Face protection
Safety goggles or face protection.

Skin protection
Rubber gloves or synthetic gloves.
Respiratory protection

- In case of extensive formation of dust a protective dust mask is recommended.

Body protection

- Protective work clothing (e.g. boots, long-sleeved body covering clothing).

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.

8.2.3 Environmental exposure control

see section 6 and 7.

9 PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Granule</td>
</tr>
<tr>
<td>Colour</td>
<td>Off-white to light pink</td>
</tr>
<tr>
<td>Odour</td>
<td>similar to bread</td>
</tr>
<tr>
<td>Melting point/range (°C)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Boiling point/range (°C)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flash point (°C)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Ignition temperature (°C)</td>
<td>Product is not flammable</td>
</tr>
<tr>
<td>Danger of explosion</td>
<td>Product does not present an explosion hazard</td>
</tr>
<tr>
<td>Solubility in/ Miscibility with water</td>
<td>Dispersible.</td>
</tr>
<tr>
<td>pH-Wert (10g/l) at 20°C</td>
<td>6.6</td>
</tr>
</tbody>
</table>

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 (25°C) for 10 months and at cool storage (8°C) for 18 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!

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**  
  $LD_{50} > 2000 \text{ mg/kg (Rat)}$

- **Dermal**  
  $LD_{50} > 2000 \text{ mg/kg (Rat)}$

- **Inhalative**  
  $LC_{50/4h} > 5.18 \text{ mg/l (Rat)}$

**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.

12 ECOLOGICAL INFORMATION

12.1 Toxicity
Aquatic toxicity
EC_{50}/48h >200 mg/l (Water flea (Daphnia magna))
EC/LC_{50}/21d >200 mg/l (Water flea (Daphnia magna))
EC_{50}/7d >100 mg/l (Water lense (Lemna minor))
EC_{50}/7d >250 mg/l (Water lense (Lemna gibba))
EC_{50}/72h >100 mg/l (Algae (Pseudokirchneriella subcapitata))
EC_{50}/96h >100 mg/l (Rainbow trout (Oncorhynchus mykiss))

Effects on earthworms
LC_{50/14d} >1000 mg/kg soil (earthworm (Dendrobena hortensis))

Effects on spider mites
A laboratory test with the predatory mite Typhlodromus pyri resulted in a LR_{50} above the maximum application rate.

Effects on birds
LD_{50}/30d >2000 mg/kg-bw*
ID_{50}/30d >2000 mg/kg-bw*
* Data refer to a product which contains the strain Aureobasidium pullulans DSM 14941.

Effects on bees
LD_{50/22d} >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

13 DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods
Product / Packaging disposal
Do not reuse contaminated packaging for other purposes; dispose according to official regulations.

Do not dispose waste or remains together with domestic waste, do not empty into sink or toilet, hand over to hazardous waste disposers (acc. to ÖNORM S2100).

Waste codes / waste designations (AVV)
53103 remains of plant protection products and biocides (acc. to Austrian law)

European waste catalogue
02 00 00 Wastes from agriculture, horticulture, aquaculture, forestry, hunting and fishing, food preparation and processing
02 01 00 Wastes from agriculture, horticulture, aquaculture, forestry, hunting and fishing
02 01 08 Agrochemical waste containing dangerous substances

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 (PMG 1997).

15.2 **Chemical Safety Assessment**
The mixture was not subject to a chemical safety assessment.

16 **OTHER INFORMATION**

**Abbreviations**

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADR</td>
<td>European Agreement concerning the International Carriage of Dangerous Goods by Road</td>
</tr>
<tr>
<td>AVV</td>
<td>Ordinance on the European Waste Catalogue</td>
</tr>
<tr>
<td>CAS No.</td>
<td>Chemical Abstracts Service Number</td>
</tr>
<tr>
<td>DSM</td>
<td>German Strain Collection for microorganism</td>
</tr>
<tr>
<td>EC&lt;sub&gt;50&lt;/sub&gt;</td>
<td>Effective concentration, which leads to a defined effect than death to 50 % of the tested population</td>
</tr>
<tr>
<td>EC B.#</td>
<td>OECD Guideline for Testing of Chemicals</td>
</tr>
<tr>
<td>EC</td>
<td>European community</td>
</tr>
<tr>
<td>EU</td>
<td>European Union</td>
</tr>
<tr>
<td>GGVS</td>
<td>Regulation for dangerous goods on the road</td>
</tr>
<tr>
<td>GGVSsee</td>
<td>Regulation for dangerous goods in lakes</td>
</tr>
<tr>
<td>GHS</td>
<td>Globally Harmonized System</td>
</tr>
<tr>
<td>IATA</td>
<td>International Air Transport Association</td>
</tr>
<tr>
<td>DGR</td>
<td>Dangerous Goods Regulations</td>
</tr>
<tr>
<td>IBC-Code</td>
<td>International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk</td>
</tr>
<tr>
<td>ICAO-TI</td>
<td>International Civil Aviation Organisation - Technical instructions</td>
</tr>
<tr>
<td>ID&lt;sub&gt;50&lt;/sub&gt;</td>
<td>The dose necessary to cause overt symptomatology in 50% of the test organisms</td>
</tr>
<tr>
<td>IMDG</td>
<td>International Maritime Code for Dangerous Goods</td>
</tr>
<tr>
<td>LC&lt;sub&gt;50&lt;/sub&gt;</td>
<td>The concentration required to kill 50% of the test organisms</td>
</tr>
<tr>
<td>LD&lt;sub&gt;50&lt;/sub&gt;</td>
<td>The dose required to kill 50% of the test organisms</td>
</tr>
<tr>
<td>NOEC</td>
<td>No Observed Effect Concentration</td>
</tr>
<tr>
<td>OECD</td>
<td>Organization for Economic Cooperation and Development</td>
</tr>
<tr>
<td>OECD No.</td>
<td>OECD Guideline for Testing of Chemicals</td>
</tr>
</tbody>
</table>
SAFETY DATA SHEET according to VO 1907/2006/EG, adapted by VO 453/2010/EG

Production date: 05.06.2015
Revision: 
Trade name: Botector®

ONORM | Standard published by teh Austrian Standards Institute
OPPTS Nr. | Microbial Pesticide Test Guidelines (Office of Prevention, Pesticides and Toxic Substances (US Environmental Protection Agency))
PBT | persistent (P), bioaccumulative (B) and toxic (T) according to criteria of REACH Annex XIII
RID | Regulation for dangerous goods on international railways
UN | United Nations
vPvB | persistent (P) and bioaccumulative (B) according to criteria of REACH Annex XIII

Relevant classification and labelling phrases (number and full text):

Regulation (EC) No 1272/2008:

EUH208: Περιέχει Aureobasidium pullulans. Μπορεί να προκαλέσει αλλεργική αντίδραση.
EUH401: Για να αποφύγετε κινδύνους για την ανθρώπινη υγεία και το περιβάλλον, ακολουθήστε τις οδηγίες χρήσης.

P101: ΜΗΝ ΡΥΠΑΙΝΕΤΕ ΤΟ ΝΕΡΟ ΜΕ ΤΟ ΠΡΟΪΟΝ Η ΤΗ ΣΥΣΚΕΥΑΣΙΑ ΤΟΥ. Μην πλένετε τον εξοπλισμό εφαρμογής κοντά στα επιφανειακά ύδατα. Να αποφευχθεί η ρύπανση μέσω του συστήματος αποχέτευσης από τις λιθόστρωτες επιφάνειες και τους δρόμους.

P102: Μακριά από παιδιά.

P261: Αποφεύγετε να αναπνέετε συγκεντρώσεις σταγονιδίων/εκνεφώματα.

P270: Μην τρώτε, πίνετε ή καπνίζετε όταν χρησιμοποιείτε αυτό το προϊόν.

P405: Φυλάσσεται κλειδωμένο.

P280: Εάν παρατηρηθεί ερεθισμός του δέρματος ή εμφανίστει εξάνθημα: Συμβουλεύεται/Επισκέπτεται γιατρό.

P342+P311: Εάν παρουσιάζονται αναπνευστικά συμπτώματα: Κλείστε την έλευση του ΚΕΝΤΡΟ ΔΗΛΗΤΙΑΣΕΩΝ ή έναν γιατρό.

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.

Indication of changes
Section: -