

Section 1 Identification of the mixture and of the company**1.1 Product identifier**

Product name Eco-77®
Synonyms T-77, Atroverde 77, Atroverde

1.2 Relevant identified uses of the mixture and uses advised against

Use of the product Biofungicide
Uses advised against Do not use for any other purpose than described on the product label

1.3 Details of the supplier of the Safety Data Sheet

Manufacturer Andermatt PHP (Pty) Ltd
Address 19 Petrus Stroom Road, Dargle, 3265
KwaZulu-Natal, South Africa
Phone +27 33 2666130
E-mail info@andermatt-php.co.za

1.4 Emergency telephone number

Phone (medical) +27 861555777 (24-H; South African Poison Information Centre)
Emergency number: +27 82 446 8946 (24-H; GPIC)

Section 2 Hazards identification**2.1 Classification of the mixture**

Conforms to the requirements of the GHS and to Section 14 of the Regulations for Hazardous Chemical Agents, 2021

Not Classified

2.2 Label elements**Precautionary statements**

May cause eye irritation
Read the label before use
Keep out of the reach of children
Wear protective gloves/protective clothing/eye protection
In case of inadequate ventilation, wear respiratory protection
Do not eat, drink, or smoke when using this product.
Wash hands and face thoroughly after handling. Do not touch eyes
Avoid breathing dust, mist or spray.
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.
IF ON SKIN: Wash with plenty of water. If skin irritation or rash occurs: Get medical help. Take off contaminated clothing and wash it before reuse.
IF INHALED: Remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Get emergency medical help immediately
Contaminated work clothing should not be allowed out of the workplace
Dispose of contents and/or container in accordance with regulations
If medical advice is needed, have product container or label at hand

Contains *Trichoderma atroviride*. Microorganisms may have the potential to provoke sensitising reactions.

2.3 Other hazards

This mixture does not contain any substances, which are persistent, bioaccumulative and toxic (PBT), very persistent and very bioaccumulative (vPvB) or endocrine disruptors

Section 3 Composition/information on ingredients

3.1 Substances

This product is a mixture

3.2 Mixtures

Trichoderma atroviride strain 77B spores in an inert carrier.
 There are no other ingredients which are hazardous within the meaning of GHS and South African Occupational Health and Safety Act (85/1993): Regulations for Hazardous Chemical Agents, 2021

Section 4 First aid measures

4.1 Description of first aid measures

General notes	Change any contaminated or wetted clothing at once. If poisoning occurs, contact a doctor or local poison/toxicology centre.
Following inhalation	Remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Get emergency medical help immediately
Following skin contact	Wash with plenty of water. If skin irritation or rash occurs: Get medical help. Take off contaminated clothing and wash it before reuse.
Following eye contact	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.
Following ingestion	Rinse mouth with water for several minutes. Get medical help if you feel unwell.
Advice to physician	Symptomatic treatment

4.2 Most important symptoms and effects, both acute and delayed

Microorganisms may have the potential to provoke sensitising reactions.

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically

Section 5 Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media Water, Foam, Carbon dioxide or dry powder may be used but select extinguishing media that is appropriate for local circumstances and the surroundings.

5.2 Special hazards arising from the mixture

Development of hazardous combustion gasses or vapours is possible in the event of fire.

**5.3 Special protective actions
for fire-fighters**

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

Section 6 Accidental release measures
6.1 Personal precautions, protective equipment and emergency procedures

The wearing of suitable protective equipment (including personal protective equipment, see Section 8 of the SDS) to prevent any contamination of skin, eyes and personal clothing. Wash hands thoroughly after handling.

6.2 Environmental precautions

Do not apply directly to water courses or to areas where surface water is present. Do not dispose of rinsate or containers in water courses. Prevent spills from entering storm sewers or drains.

6.3 Methods and material for containment and cleaning up

Sweep or vacuum, without creating dust, into a suitable container for disposal and wash area with water.

6.4 Reference to other sections

See personal protective equipment under Section 8 of SDS.

Section 7 Handling and storage
7.1 Precautions for safe handling

Wear protective gloves/protective clothing/eyewear.
 Ensure that open wounds are covered.
 Do not eat, drink, or smoke when using this product.
 Wash hands and face thoroughly after handling.

7.2 Conditions for safe storage, including any incompatibilities

Store in the original container under cool, dry conditions between 4 and 10°C. Avoid contact with fungicides and all materials toxic to microorganisms to maintain product quality. Keep out of reach of children and uninformed persons

7.3 Specific end use(s)

Biofungicide

Section 8 Exposure controls/personal protection
8.1 Control parameters

The usual precautionary measures for handling microbial products should be observed. Provide adequate ventilation.

8.2 Exposure controls

Eye/face protection

Wear eye protection

Skin protection

Wear protective clothing

Respiratory protection

In case of inadequate ventilation, wear respiratory protection.

Thermal hazards

No specific recommendations

Other information

None

Section 9 Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	Powder
Colour	Light grey
Odour	Odourless
pH	7.1 (1% solution in water)
Melting point/freezing point	Not available
Initial boiling point and boiling range	Not applicable
Flash point	Not flammable
Flammability	Not flammable
Upper/lower flammability or explosive limits	Not flammable
Vapour pressure	Not applicable
Vapour density	Not relevant
Bulk density	0.52 g/mL
Solubility(ies)	Insoluble
Partition coefficient: n-cotanol/water	Not applicable
Auto-ignition temperature	Not available
Decomposition temperature	Not determined
Viscosity	Not determined
Explosive properties	Not explosive
Oxidising properties	Not determined
Particle characteristics	0.37% w/w > 75µm
Corrosivity	Non-corrosive

9.2 Other information

None

Section 10 Stability and Reactivity

c Reactivity

Not reactive

10.2 Chemical stability

No decomposition if stored and handled according to recommendations

10.3 Possibility of hazardous reactions

No known hazardous reactions

10.4 Conditions to avoid

Avoid very low or very high temperatures.

10.5 Incompatible materials

Fungicides and toxic compounds (to maintain product viability)

10.6 Hazardous decomposition products

The mixture is not expected to produce hazardous decomposition products when used and stored properly

Section 11 Toxicological information

11.1 Information on toxicological effects

Acute toxicity	Not classified Oral toxicity: LD ₅₀ (rat) > 5000 mg/kg Dermal toxicity: LD ₅₀ (rat) > 5050 mg/kg
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Skin corrosion/irritation	Inhalation toxicity: LC ₅₀ (rat) > 2.05 mg/L (the maximum attainable concentration) - no adverse effect Intraperitoneal toxicity: LD ₅₀ (rat) > 1.16 x 10 ⁸ spores/animal Pulmonary toxicity: LD ₅₀ (rat) > 2.14x 10 ⁹ CFU/g Not classified Rabbit, 500mg/animal Mean score ≤ 0.25.
Serious eye damage/irritation	Not classified May cause eye irritation Rabbit, 100 mg/eye
Respiratory or skin sensitization	Non-sensitiser
Germ cell mutagenicity	Classification not possible
Carcinogenicity	Not classified
Reproductive toxicity	Not classified
STOT-single exposure	Not classified
STOT-repeated exposure	Classification is not possible.
Aspiration hazard	Not determined

11.2 Information on other hazards

Not applicable

Section 12 Ecological information
12.1 Toxicity
Acute (short-term) toxicity

Fish	Not classified <i>Danio rerio</i> : LC ₅₀ > 1.00 x 10 ⁶ spores/mL <i>Oncorhynchus mykiss</i> : 30-day NOEC > 1X10 ⁶ CFU/mL of the active
Crustacea	Not classified <i>Daphnia magna</i> : LC ₅₀ > 1.00 x 10 ⁶ spores/mL
Algae/aquatic plants	Not determined
Other organisms	Honeybee, oral (96 hours) LD ₅₀ > 100 x MFAR Honeybee, contact (96 hours) LD ₅₀ > 100 x MFAR Quail, LD ₅₀ > 5mL/kg body weight Earthworms: LC ₅₀ > 1000mg test item /kg

Chronic (long-term) toxicity

Fish	Not determined
Crustacea	Not classified <i>Daphnia magna</i> : no adverse effects at 5.03 x 10 ⁵ CFU/mL
Algae/aquatic plants	Not determined
Other organisms	Not determined

12.2 Persistence and degradability

Abiotic Degradation	Not determined
Physical- and photo-chemical elimination	Not determined
Biodegradation	Not determined

12.3 Bioaccumulative potential

Octanol/water partition coefficient (Kow)	Not determined
Bioconcentration factor (BCF)	Not determined

12.4 Mobility in soil

Known or predicted distribution to environmental compartments	Not determined
Surface tension	Not determined
Adsorption/Desorption	Not determined

12.5 Results of PBT and vPvB assessment

This mixture does not contain any PBT or vPvB substances.

12.6 Other adverse effects

None

12.7 Additional information

None

Section 13 Disposal considerations
13.1 Waste treatment methods

Product/Packaging disposal	Use pressure rinsing devices or triple rinsing with water to reduce any product residues in the container to insignificant levels. Don't dispose product or containers on ponds, rivers or ditches. Don't re-use containers for other purposes. Waste disposal and recycling contractors will take cleaned containers. Waste resulting from the use of the product must be disposed on site or on an approved waste disposal facility. Empty the sprayer out in the field being treated by spraying out on to a relatively pest free part of the field left unsprayed or under-dosed for the crop.
Waste codes/waste designations	Not applicable
Waste treatment-relevant information	None
Sewage disposal-relevant information	Waste should not be disposed of by release to sewers
Other disposal recommendations	None

Section 14 Transport Information
14.1 UN number or ID number

Not applicable

14.2 UN proper shipping name

No dangerous goods

14.3 Transport hazard class(es)

Not restricted

14.4 Packing group

Not applicable

14.5 Environmental hazards

Not environmentally hazardous

14.6 Special precautions for user

Not applicable

14.7 Maritime transport in bulk
according to IMO
instruments

Not applicable

Section 15 Regulatory information**15.1 Safety, health and environmental regulations/legislation specific for the mixture**

Authorisations	Not relevant
Restrictions on use	Not relevant
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).

15.2 Chemical Safety Assessment

Advice on product handling can be found in sections 7 and 8 of this SDS.

Section 16 Other information

The information only concerns the above-mentioned product and does not need to be valid if used with other products or in any process. The information is, to our best present knowledge, correct and complete and is given in good faith but without warranty. It remains the user's responsibility to make sure that the information is appropriate and complete for particular use of the product.